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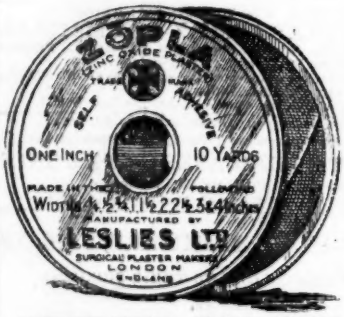

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LECTURE I.—ON "MENTAL DEFECT": ITS GENERAL AND SPECIAL IMPLICATIONS.

(*Delivered on Oct. 25th.*)

THE presence in a notable number of offenders against the criminal law of clear evidence of mental defect, which *practically* marks them off from the bulk of the law-abiding community and from the majority of criminals as well, is recognised by all those who have good opportunities of observing and conversing with convicted prisoners. I lay purposeful stress here on the word "practically," using it without making any assumption that this particular group of criminals is otherwise differentiated. I mean only that such criminals are the subjects of patent mental defect of some kind or other, which is recognisable, with but little expert knowledge, from the quality of their conduct, and quite apart from any consideration of the crimes for which they have been convicted or of the probable nature and origin of the mental defect inferred. Such criminals as these have been for a long time regarded by the English prison authorities, for the purpose of special treatment, as being practically a class apart from the average prisoner, and have been described in the *convict* prisons, the inmates of which are all sentenced to penal servitude (i.e., for three years or more) as "weak-minded" and more or less irresponsible for their misdoings. They were thus recognised in the several convict prisons for a considerable period of time before I became a Commissioner of Prisons 22 years ago. All of such weak-minded convicts have now for many years been congregated in one only of the convict prisons, where they have appropriate work, under special regulations, and are mainly regarded and treated as hospital cases under the immediate supervision of the medical officers. Several of them are ultimately certified under the lunacy law and sent to asylums, and others are dealt with under the recent Mental Deficiency Act.

A general recognition of this kind of criminal has existed in this and other countries for a long time, as is manifested in a still growing mass of literature dating from about half a century ago, and devoted more particularly to the study of criminals themselves than to that of crime and the problems of punishment, which had mainly absorbed the attention of prominent writers on penology during the eighteenth century and most of the nineteenth. It is only in comparatively recent times that the study of criminals has to some extent taken the place of that of penal jurisprudence, and that the conception of what is called a science of "criminology" has made its appearance.

MENTAL DEFECT AS A FACTOR IN CRIMINAL ACTION.

I cannot attempt to give in these lectures even a short compendious account of the large number of modern works, mostly of non-English origin, on this subject, but must confine my attention only to such topics as may be necessary for the elucidation of my purpose. This purpose is, chiefly, to state as clearly as I can my views on the extent of the rôle played by mental defect as a factor in criminal action, and, incidentally, to glance very briefly at the relation of that rôle to the penal treatment of offenders. And I may say at the outset that after considerable practical experience and reflection, and no little study of British, American, and European writings on the subject, I am forced to the opinion that no "science" or systematic study of criminals in the mass, sufficiently definite to be of great practical value, is likely to be arrived at. I have long been convinced, in common with other observers of our species, that all human beings are potential criminals; and that a large number of men and women commit crime, in the sense of wilfully injuring society for their own individual purpose, whether or not they are detected in breaking, or even break, any existing law. The study of criminals is, indeed, an integral part of the study of man, and of human psychology especially; but the indefinite nature of the differences that have as yet been established between criminals and law-abiding men in the mass seems to me to point away from the prospect of establishing anything like a special and clear-cut body of knowledge which would merit the name of a "science" of criminology. I trust that my subsequent remarks will justify this initial expression of opinion.

I have used in my opening sentence the term "mental defect" in its widest sense, not in the more special sense as it occurs in the Mental Deficiency Act of 1913, and as I shall usually employ it later in these lectures. For the moment I mean this term to cover all such cases, whether described as "unsoundness" or disorder, or defect, of mind, as are recognised by the Lunacy and Mental Deficiency Acts, as well as such other cases as may need special care and control, but cannot be included under any category which is held to qualify them for technical certification. It is clear that all the cases recognisable under these Acts—i.e., persons of unsound mind, idiots, and the other groups specified in the Mental Deficiency Act—are cases of *defective or disordered mind;* although, equally of course, not all cases of defective or disordered mind are recognisable by either of these Acts.

I would, therefore, recast my opening sentence thus: There is a notable number of law-breakers of all kinds, not only of those sentenced to terms of penal servitude, but also of those convicted for lesser offences against the law, who are quite clearly the subjects of mental defect in some of its recognised forms and degrees. It is, moreover, largely but not by any means wholly with respect to this class of offenders that the important questions of their responsibility, or degree of liability to punishment, and of their appropriate treatment, are concerned.

With regard to the prevalence of certifiable insanity in prisoners, compared to that in the population at large, as computed from the annual returns of asylum inmates, and of prisoners detected as insane and certified as such after coming to prison, this is practically the same; but, as it is stated in the late Dr. Charles Goring's well-known work on "The English Convict," if the number of *deaths* of prisoners certified insane and subsequently removed to asylums are added to the prison returns, "a high degree of association between crime and insanity is manifest." This is a valuable corroboration of the impression received in prisons generally of the not inconsiderable numbers who come into prison with signs of easily recognisable insanity, and who are promptly certified and, being sent to asylums, are no longer returned as prisoners. It has, indeed, been long known that insanity of an unquestionable kind is a very frequent contributor, if not practically the chief factor, in the production of many crimes, homicidal or other, characterised mainly by injury to person or property, and also including some "political" crimes perpetrated on the strength of unquestionably genuine delusions.

When I arrive at the closer consideration of the relationship between mental defect and criminal action generally, which will be the subject of my next lecture, I shall have to limit my remarks almost entirely to mental defectives other than "insane persons" or "lunatics" technically so-called, whether or not such mental defectives be actually certifiable under the recent Mental Deficiency Act of 1913. For it is notably in connexion with this class of cases that the scientific and practical aspects of the subject in hand becomes of high importance and has been the subject of much discussion. It is here that we encounter the chief question proper to our theme—viz., whether the mass or the majority of law-breakers are signalised by such marks of mental defect as to justify their being regarded from a scientific point of view as almost

wholly the product of "natural" or "constitutional" defects, and but slightly, if at all, of the "force of circumstances" that have acted upon the individual law-breakers through their lives. But before I enter upon this main question I must mention a few initial difficulties which beset more or less the study and exposition of "mental defect" in its more special sense, without giving regard for the moment to its relation to crime. Some of these difficulties are of a practical, others of a theoretic, nature.

THE MEANING OF THE TERM "MENTAL DEFECT."

The first point for note is the content of the term "mental defect" in general, and as it is interpreted in the Act of 1913. In *general* the study of mental defect is a matter of psychology, and in common with that of mental soundness the term connotes a meaning which must vary according to views held by the student touching the nature of mind and its relation to the bodily organs, and especially to the brain. We are all aware that these views are numerous, and are held with considerable tenacity by their various adherents. They may be roughly divided into opposite groups, commonly known as the "scientific" and the "metaphysical," and by many other pairs of opposite terms: such as "materialistic-idealistic" or "mechanist-vitalist."

The unnecessary introduction of the fundamental problems of psychology into some questions of practical import in the study of mental faculties is not infrequent, and usually tends to produce confusion. It has often struck me that these problems have been inserted or have crept irrelevantly from time to time into inquiries held concerning the recognition and care of persons who are "mentally defective." As I was about to write this part of my lecture, and thinking of a short form in which I could express the ground on which most of the disputants I allude to could meet in peace, I came upon the deeply interesting address delivered last July by Sir Frederick Mott to the Congress of the Royal Sanitary Institute and found just what I wanted, at the beginning of that part of his address which dealt with "objective psychology."

> "The furniture of the mind is the memory of the experiences of our life and the bonds that unite them: there can be no mind without memory and no memory without body. The furniture of the mind of primitive man" (which is what we study as mental qualities) "consists largely of the memory of experiences connected with the primal instinctive activities of nutrition by capture of food, of self-preservation, and avoidance of pain, of reproduction, and of the 'instinct of the herd' (or, as some would put it, of imitation). 'The civilised man is able, not only to store up and utilise his own experiences, but by means of language and abstract thought to associate these experiences with those of innumerable other human beings who live and have lived, and thereby to reason on a much higher plane, and utilise his psychic (or mental) energy in a multitude of refined ways for the ultimate ends of the primal instincts."

Whether we are all agreed or not to look upon the word "mind" as the name given to the sum of the items of furniture of the primitive mind thus set forth in brief by Sir Frederick Mott I think that most *will* agree that for most useful purposes we shall not quarrel about accepting the mental content which he signifies as sufficient to denote the essence of what we all mean in speaking of "mental phenomena," mental soundness, and mental defect. We can all find here, without philosophising more deeply, a sufficiently satisfactory basis for such a common conception of the general meaning of those psychological terms the use of which is unavoidable.

As regards the *special* meaning of the term "mental defect" as employed in the Act of 1913 it must be remembered that the Act technically recognises for the first time a large class of persons of all ages who were not held to be certifiable under previous Acts, but who, according to a mass of evidence produced by the Royal Commission's report which was the immediate occasion of the passing of the Act, needed legal control of some kind. It was at the instance of some experts in the study of the human mind, and, more especially, of certain public bodies of active social workers, that the Government in power in the first quinquennium of this century felt it right, after taking counsel from various sources, including the Prison Commissioners, to appoint a Commission to inquire into the alleged necessity of fresh legislation in the matter of the "feeble-minded." The chief finding of the above-named public bodies at first, and subsequently of the Royal Commission after much inquiry, was that by far the largest number of these uncertified or uncertifiable persons were those generally known, in this country especially, as "feeble-minded." Possessing superior mental activities to those of persons known as "imbeciles" or "idiots," these feeble-minded, in virtue of this very superiority, were mostly left without care or control, although they were capable of causing a grave amount of social harm in many directions, and were unable to contribute to their own living without supervision. In America and elsewhere this large group of persons had been similarly recognised by experts and described as the highest grade of "imbeciles," or mental defectives not certified as insane. But the term "feeble-minded" was then in general use in America as including also "imbeciles," and even "idiots" of the lowest grade. At the present time, however, the term "moron" (a Greek neuter adjective, meaning "foolish") is now applied by many American writers to this high grade group which is called "feeble-minded" in the English Mental Deficiency Act. Yet it seems that the American and English terms "moron" and feeble-minded are not quite co-extensive in their denotation, for the former is more limited than the latter to cases evincing defect of the mental faculty of intelligence alone; and thus, apparently, less regard is paid to those persons who, with slight, or as some say, *no* remarkable defect of intelligence, show such constant and patent defects of conduct, (indicating disorder in the sphere of emotions, or of morals,) as render them dangerous members of society.

PRACTICAL DIFFICULTIES IN DEFINITION.

But what especially concerns us here, from the practical point of view, is that the Mental Deficiency Act requires a certain definition of "mental defect" to be attested in the certificate; whereas the Lunacy Act contains no definition of the terms "unsound mind" or "idiot" which denote the only classes of persons who can be certified under it. In the Lunacy Act there is no definition at all of Lunacy as a state or *condition*. Only in the Glossary to the Act it is said that "lunatic"—i.e., the word in the Act—means a "person of unsound mind *or* an idiot." It can scarcely be doubted, however, that some practical distinction was obscurely hinted at in this glossarial interpretation; it seems to indicate that the person of unsound mind had once been of a sound mind, and that the idiot was born an idiot; and thus to bring in the very old and somewhat practical division into two classes of people not "right in their minds." In more recent days a similar distinction is frequently made by the use of the somewhat loose or inaccurate terms of "acquired" and "congenital."

But although "idiots" can be certified under either the Lunacy or Mental Deficiency Act indifferently—this being a further instance of the regrettable separation of the two Acts—the higher-grade cases of mental defect, at least in *England*, cannot be certified under the Lunacy Act. I have been told by some, however, that the Scottish law is interpreted more elastically in this respect. The fact remains as a cause of difficulty and confusion that the lunacy certificate is, in form, mainly a statement of observed facts of conduct: whereas the mental deficiency certificate may be, and is often, taken as directing the certifier to testify that the condition of mind in question actually existed from birth or an early age; and this interpretation implies that this Act takes some cognizance of the further question of the origin or cause of the defect, which question is not raised or implied in the lunacy certificate.

I did not at first regard this last-mentioned imperfection of the Mental Deficiency Act as likely to cause very great difficulty, provided an intelligent and liberal interpretation of it were encouraged, though I detected the flaw when I saw the Act in its later form on its

appearance in 1913. But I have in subsequent years been convinced, by communication with some of the best experts whose duty it has been to certify under this Act, that the form of the certificate is a stumbling-block to many. I am of strong opinion that the mere *descriptions* of the various grades of mental defect which the Act is concerned with should never have been converted into a statutory *definition* or incorporated in the required certificate. This change was introduced first in the drafting of the Mental Deficiency Act of 1913, which followed on the Bill withdrawn from the House by the Secretary of State owing to opposition in the preceding year. I have previously dwelt at some length on this point in various papers published in the *Journal of Mental Science*, and also at several conferences concerning the diagnosis and treatment of the feeble-minded, and need say but little further on it now. There seems to be some reason to believe that this difficulty is becoming more or less recognised officially, and that in certifying cases of "mental deficiency" a clear statement of opinion, based on reasons clearly set forth, that the instance in question belongs to the category specified in the Act, is usually accepted as sufficient for the validity of the certificate. It is certainly true that the form of the lunacy certificate seems at first sight simpler, and thus the easier of execution, in order to meet the requirements of the Act; but it is also true that the lunacy certificate may not seldom present difficulties equal to those of the Mental Deficiency Act. The essence of the certificate in both cases must consist in reasoned opinion. In connexion with our present subject this difficulty of certification is mostly met with in the case of adult criminal defectives, whom it is desirous to certify for the purpose of placing them under more appropriate care and control than that of the prison regime. For in many instances it is impracticable to ascertain the facts of the early history of criminals, even of the sane.

THE CLASSIFICATION OF SOCIAL INEFFICIENTS.

The second point I have to note is this. Some writers have held that the recognition of "mental deficiency" according to the Act depends on the observation of defect of intelligence alone, but that such mental defectives do not form the whole of the subjects whom the Act is intended to control. Opinions, moreover, differ as to whether in the assessment of "mental deficiency" in any case, criminal or not, account should be taken of peculiarities of mental manifestations other than those clearly occurring in the sphere of intelligence; and this consideration is apt to lead to much controversy and confusion.

However, as far as the criticism of the Act itself is concerned, this much may be said on both of these objections: (1) There is no limitation in the Act of the meaning of the term "mental" to the sphere of thinking or intelligence alone—such limitation, that is to say, as would exclude regard of disorder or defect referable to the sphere of the emotions; and (2) the general test of mental condition by careful observation of conduct is practically set forth in the description given in the Act of the various groups of persons intended to be dealt with. This is also true in cases of certification under the Lunacy Act, in which it is not seldom very difficult or impossible to demonstrate any disorder in the sphere of thinking, and yet to find no practical hindrance to the diagnosis of "unsound mind."

It is illogical and erroneous to assume that the term "mental defect" does not cover defect of mind generally (as displayed in the various manifestations which most psychologists recognise as signs of mental action), and then to proceed to infer that there are large numbers of persons liable to be dealt with by the Act who are not mental defectives, but rather "social inefficients," on the ground that their grade of intelligence is not lower than that of average persons. Stress has been laid on this special interpretation of mental defect by those who hold that the constitutional or natural factors of the various mental characters of men can be disentangled from those which are adventitious or due to the external influences of each individual's experience and circumstances; and that then, being thus disentangled, the faculty of intelligence can be dealt with as a simple character not subject to further analysis. I shall have to deal with this point again later in reference to its bearing on the relation of mental defect to crime. It is enough to say now, in connexion with the criticisms I have mentioned, that there are many observers of mentally defective persons who hold strongly that even in the case of those numerous "social inefficients" who do not display at first sight any lack of intelligence evidence of some such lack can always be elicited; and, further, that few, if any, psychologists, however widely they may differ on many important points, confine their conception of "mind" to the faculty of intelligence alone. The time is now past when a definite "delusion" was required to be established for the validity of a lunacy certificate.

HEREDITY OR ENVIRONMENT?

My third and last preliminary note touches on some difficulties in connexion with the Mental Deficiency Act which have been caused by the introduction, not easily avoided, of biological questions on the origin of mental defect. This leads to discussions regarding heredity between those who hold widely different views as to the meaning of the word "heredity," and especially between those who, on the one hand, regard all mental characters that lend themselves to study as referable in origin *either* to natural transmission, *or* to acquirement derived from external influences, and those who, on the other hand, regard such mental characters as necessarily requiring both these elements. In the next lecture, when dealing especially with the criminal aspect of our subject, I shall refer again shortly to the eminent importance of the part played by external influences, or "environment," or "nurture" on the highly complicated nervous structures of man on which depend the various manifestations or functions which we call "mind." But here I wish to lay stress only on what may be called the "natural" or inborn element which in many patent cases of so-called "mental defect" is the immensely predominant factor. Experience makes specially evident the tendency of this class of cases to "run in families," and, in many of them, to be recognisable in very early life, even without showing any signs of significant physical defect. I do not imply, in saying this, that this class of very salient instances of mental defect are, psychologically or otherwise, distinguished in any hard-and-fast way from the minor specimens of mental defect of various grades which are less obvious to observation and thus do not attract general attention. The omnipresence of an inborn and transmissible element in the development of all mental characters whatever, whether in their healthy or pathological aspects, is not doubted by any scientific student of psychology, and need not be regarded as a matter for argument.

At present we have little definite knowledge of the cerebral and other organic conditions which necessarily underlie actual mental manifestations of all kinds and grades, average, excessive, or defective, common or rare, as the case may be; and we are forced to rely mainly on the careful clinical observation of individual cases for indications of such mental defect as seem to render it desirable or necessary that the subject of it should be specially treated. It may yet come within our knowledge that there is a definite association of some special brain or other organic conditions with certain differences of mental potentialities. Or further comparative study of the brains of human mental defectives and anthropoids may possibly throw more light than we have now on the question whether in some cases clearly manifest degrees of early deficiency may be truly reversional in character. But such knowledge, if gained, would not help us much towards making an accurate diagnosis of degrees of mental defect or disorder during the life of the subjects of it. In practice, however, as I have said, degrees of defect indicating certain lines of action in cases which come under question may generally be discovered by careful study of the *individual's* conduct and of his capacity to learn what is fundamentally requisite for a human being to know in

order to live sanely and more or less successfully with his fellows. And this can be achieved without necessary reference to any strictly rigid standard of mental capacity. I cannot enter here into the highly interesting question of the various tests which have been proposed for ascertaining, by comparison with a standard based on the average intellectual capacity of growing children, the capacity of apparently defective persons of any age; but I may say, only by the way, and judging from the information I have gathered from others, and from reading, rather than from my own experience, that short of being regarded as providing any royal road to certification under the Act, or as an *authoritative basis* for evidence given in a court of law, such tests are likely to prove of considerable use in recording cases with a view to making reports for the preliminary grading of children in classes or for serving as a help to observers towards recalling results of the successive interviews which are mostly necessary in arriving at any practical decision.

LECTURE II.—ON THE RELATION OF MENTAL DEFECT TO CRIME.

(Delivered on Nov. 1st.)

I reviewed in the last lecture the matter of mental defect generally, as far as seemed necessary before considering my main subject; and then commented on some of the difficulties that are met with in dealing with mentally defective prisoners from the point of view of their description, care, and control. I begin this lecture with a few explanatory words on what I mean by crime, as introductory to the subject of its relation with mental defect. There is a legal, and also a psychological—moral, and more or less popular—meaning of the term "crime"; and these two meanings frequently tend to become mixed in writing and in thinking. In the legal sense crime means offence against certain existing laws, and "criminal responsibility" thus means liability to punishment under those laws. In the wider sense crime implies conduct injurious to society, and, as Dr. Mercier has said in his recent book on "Crime and Criminals," "by this must be understood the society to which the criminal belongs." Thus the more comprehensive concept of a "criminal" is that of a person who acts wilfully in a manner which is injurious to society, one in whom self-regarding conduct is frequently preponderant over social conduct. In many questions of the responsibility or liability to punishment of any individual either charged with a definitely legal crime, or deemed to be guilty of any important anti-social act, the verdict, be it that of a court of justice or of the sense of social justice alone, must depend more or less on whether or no the accused was fully aware of the nature of the wrong he did, and appreciated the circumstances in which it was done. As a matter of fact, while legal decisions in such cases do often depend to a considerable extent on these considerations, "responsibility" for crime in the wider sense has reference wholly, as Sir James Fitzjames Stephen said, to the law as it ought to be. I have no intention to discuss further the great question of criminal responsibility, but have merely mentioned it now when speaking of the different senses in which the terms "crime" and "criminal" are used and sometimes confused.[1]

I purpose, in what follows, to employ these terms generally in the wider sense which I have noted, and to apply the words "convicted criminal," "convicts," or "prisoners" to such offenders who have been *convicted* of law-breaking. It is imperative, in considering the relation of mental defect to crime, to adopt this comprehensive meaning of the word crime. Law of any one period does not cover all actions which are clearly harmful to society; but it must include some actions which the contemporary social conscience would not regard as criminal offences—e.g., some breaches of police regulations, &c. In dealing, however, with the question of mental defect as a factor in criminal action, or in the production of criminal men in the mass, it is possible, convenient, and, for many purposes, sufficient to take under survey only such criminals of all kinds as have been convicted and punished as law-breakers. But we must always bear in mind that large numbers, similarly criminal, are not detected, and that, especially among persons of so-called superior education, there are many whose offences have been spread over several years before detection leads to conviction. Such persons may well be regarded as habitual criminals. But the present law relating to habitual criminals (The Prevention of Crime Act, 1908) provides that no one is amenable to preventive detention unless he is charged with being an habitual criminal simultaneously with a charge of having committed a fresh offence. And for this purpose the term "habitual criminal" is strictly defined in this Act.

At the outset of my last lecture I indicated that a significant proportion of convicted criminals, as compared with the average population, are shown to be either certifiably insane or the subject of such pronounced mental defect—evidenced by their general conduct, apart from consideration of the particular crime of which they are convicted—as to need special control. The popular inference regarding criminals who have committed homicide or any specially revolting or apparently motiveless crime, that they are "out of their minds," is often corroborated by facts observed after their arrest or soon after their conviction. And in many other cases of crime of all kinds and degrees of gravity insanity or other form of mental defect is frequently recognised by medical officers when criminals come into prison after a trial during which no such defence had been raised. It must be noted here that besides the cases of certifiable insanity above mentioned it has been computed by various observers of much experience in the convict prisons that there are from 10 to 20 per cent. of men convicted of crime serious enough to entail sentences of penal servitude of from three years and upwards who are quite incapable of any conduct which would fit them for any form of social life, and are devoid of such mental qualities as would prevent them yielding to common temptations to do some kind of harm to others. Many or most of these cases are doubtless referable to the group of mental defectives generally recognised as congenital in origin. Now, though I am by no means intending here to attribute to this group any special character relative to the origin of their defect, which may not exist in some degree in all other less-marked cases of mental defect, I urge that taking this group and the technically "insane" group together, there is ample justification for regarding the mental disease, disorder, or defect which is inferred as existing in these cases, to be the chief cause of the criminal conduct displayed. In all forms of mental defect the orderly control over the action of the human organism is lessened or deranged or absent; and this fact alone is adequate to explain many criminal actions, all of which involve the predominance of instinctive and other self-regarding motives over those acquired motives which serve to regulate the conduct of the major part of the community which avoids, or is not convicted of, crime. This striking association in many cases of mental defect and disorder with the commission of crime, as well as the inference that defect and crime stand in direct relation as cause and effect, are recognised explicitly or implicitly by most students of criminals, and this matter needs no further exposition. Thus far, we see that an important part played by mental defect in the production of a certain proportion of criminals is clearly illustrated by a mixed group of prisoners whose criminal conduct may be regarded as often and to a large extent referable to pathological or aberrant conditions of organic origin, issuing, with respect to their mental results, in the form of evident loss of duly integrated nervous control. While the make-up of everyone is the outcome of his inborn capacities and of

[1] For a clear and highly instructive consideration of "Criminal Responsibility" involving the question of the law as it is, and the law as it ought to be, there is, I think, nothing better than Sir James Fitzjames Stephen's "History of the Criminal Law," and Dr. Mercier's work on "Criminal Responsibility" (1905), with comments on the former book.

the influences exerted on their development by use and experience—or "education" in its most comprehensive sense—the majority of these defectives may be regarded as mainly the victims of their natural lot.

THE CONDUCT OF THE MAIN BODY OF CRIMINALS.

We have now to consider the case of the main body of criminals: not only those sentenced to long periods of penal servitude: the large majority of whom, probably about 80 per cent., are not the subjects of such a grave degree of mental defect as we have described. The conduct of most of these men does not suggest that they differ greatly or at all in general intelligence from the bulk of the unconvicted population of social grades and circumstances similar to their own. We shall thus now be chiefly concerned with convicted criminals of all kinds and grades who, whatever may be the origin of such mental defect as might possibly, after careful examination, be attributed to them, do not give us cause to regard them as "irresponsible"—i.e., not "rightly liable to punishment" by the law as it is. It is clearly necessary in any endeavour to form an approximate opinion of the rôle of mental defect in the production of crime in general to bear in mind that, although this large class must form the chief material that concerns us, it is practically impossible—mainly because of the very short sentences of most who compose it—to make any such trustworthy study of their individual characters as may be practicable in our convict prisons where the men can be observed for long periods and interviewed frequently. The necessity for bearing this in mind struck me forcibly when reading the interesting work on the "Individual Delinquent," by Dr. William Healy, of Chicago, which contains a mine of information on what may be termed the clinical histories of many criminals. Valuable these histories undoubtedly are, owing to the careful observation and thought employed in their production. But what relation in number these histories bear to any given large number of prisoners who did not undergo such an examination does not appear. The whole collection of cases seems to have been made expressly for the excellent purpose of emphasising the importance of minute study of every delinquent before a just estimate can be formed of the ingredient factors of his crime and of his appropriate treatment, rather than with the object of estimating the extent and force of mental defect per se in producing crime, as compared with that of the extent and force of external influences working on the criminal's inborn capacities.

Since time will not allow me even to sketch an account of the various doctrines that have been promulgated concerning the part played in crime-production by "natural" or inborn qualities on the one hand, and by "nurtural" or environmental influences on the other, I may say here that the extremest views, as formerly expressed by their supporters, are now held by but very few, and that we may practically disregard the exclusive theory of the "born criminal" as held by the one extreme school, as equally discredited with that of the opposite school which taught that the criminal is "made," and is wholly the creature of his social environment, education, and experience.

THE FACTORS OF CRIMINAL ACTION.

In proceeding with the consideration of the factors of criminal action I shall find it necessary to differ only from that opinion which attributes the genesis of crime mainly, if, indeed, not entirely, to certain inferiorities of constitutional or natural origin, and takes little or no account of external influences as bearing on the development of the natural capacities, and consequently, on the actual mental characters of men as we can observe and study them.

My own view, formed after a fair amount of personal experience in the study of criminals, and after giving regard to what can be learned concerning the development of the "mind" from biological and psychological data, is this: the mental make-up of criminals generally, like the mental make-up of all men, depends on the inborn capacities or possibilities of development as well as on the multiform agencies from without which act on this germinal material and may influence its development and give it a bias in many directions. This statement is, indeed, applicable to physical and mental characters generally, and very especially to human mental characters. These must all be regarded as neither wholly "natural" or "constitutional," nor as wholly "nurtural" or "acquired" in origin; they are always the product of both of these factors, though doubtless in varying proportions in different cases.

Regarding as I do the process of development of the human mind as having an essential bearing on the special matter now under consideration, I find reason for making the following condensed quotations in illustration of what I have said. Sir Ray Lankester, in his presidential address on the Advance of Science to the British Association in 1906 said, while speaking of the science of psychology:—

> "The most important general advance in this science seems to be the recognition that the mind of the human adult is a social product; that it can only be understood in relation with the special environment in which it develops, and with which it is in perpetual interaction."

Lankester says further, in quoting from a paper he communicated to the Biological Society of Paris in 1899:—

> "In discussing the significance of the great increase in the size of the cerebral hemispheres in recent, as compared with Eocene, mammals, and in man as compared with apes, I came to the conclusion that the power of building up appropriate cerebral mechanisms in response to individual experience or what may be called "educability" is the quality which characterises the larger cerebrum, and is that which has led to its selection, survival, and further increase in volume. The character which we describe as educability can be transmitted; it is a congenital character. But the results of education cannot be transmitted. In each generation they have to be acquired afresh. ..... On the other hand, the nerve-mechanisms of instinct are transmitted ..... they are not acquired by the individual in relation to his particular needs."

And Sir Archdall Reid wrote on similar lines in his book "The Present Evolution of Man," published in 1896, and later in the "Laws of Heredity" in 1907. In the latter, when speaking of the development of mind, Reid maintains, by an array of evidence, that the great peculiarity of the human being as compared with other animals is that the distinctive characters of his mind arise much less, as he expresses it, under the stimulus of nutriment alone, and much more under that of use and experience; that his instincts are fewer, while his capacity for making acquirements is infinitely greater and more variable; and that since nature has rendered man transcendently responsive to the "nurture" of use and experience, the question, so often asked, whether "nurture" or "nature" plays the most important part in the development of the human mind has really but little meaning.

To return now to the subject of criminals. With respect to some, of whom I have already spoken, the dominance of the mental defect (which I suppose all observers, whatever their views may be as to the factors of crime, will regard as natural or constitutional, unless there be reason to attribute it to some other process acting on the individual after conception), appears so prominent as to render insignificant any consideration of the action of the environment. But, generally speaking, I believe that in studying the various mental qualities of man as we recognise them it is impossible so to handle them for the purpose of any investigation as simply constitutional or inborn, and taking no account of the external influences on their actual development, which I hold must have a large share in the formation of the mental quality or character in question. Whether this view be correct or not, it must apply to the study of criminals in the mass as well as of any other men; and, on the assumption that it is correct, it is justifiable to say that with some exceptions, already noted, it is not practicable to assess with any precision the proportionate influences of the two necessary factors of "heredity" and "environment" in the development of the minds of criminal men. With the exception, then, of a certain minority of criminals who are the subjects of a high degree of mental incapacity in some form or

other, I am of opinion that the bulk of convicted criminals are not so defective in mind as to prevent their criminal conduct, which is without question partly the expression and result of their inborn mental capacities, from being regarded in respect of its origin in the same way as the conduct and mental qualities of all other men would be regarded, psychologically or biologically. This view was based mainly, but not wholly, on my observations of many prisoners convicted of serious crimes and sentenced to long terms of imprisonment, the large majority of whom did not evince any marked signs of grave mental defect either by their conduct or their talk; I thus found further reason to question the solution of crime-production by the theory of constitutional defect per se.

From about nine years ago, when the new Preventive Detention Prison at Camp Hill in the Isle of Wight was ready to receive habitual criminals sentenced under the Act of 1908 for "the prevention of crime," in the course of my joint work with some others in advising the Home Office in the matter of releasing some of these convicts on a special and strict licence I have had much increased opportunity of lengthy interviews with large numbers of prisoners who, from the quality of their records alone, might well be reckoned among the worst of their kind. Among these men it might be expected by many to find a considerably greater percentage of mental defectives than in other collections of prisoners. They had all served previous sentences of penal servitude, some of them as many as four or five, and a considerable majority of them had begun their career of crime in childhood or early youth. The conditions of their detention allowed of more freedom and of far more frequent and intimate observation by the governor and the medical staff and others than are possible in the ordinary prisons. A return recently given to me by the medical officer, Dr. James Murray, of the "mental cases" of various kinds that have been classed as such in this prison shows that out of 475 prisoners of the habitual class I have described who were received from the courts since 1912, 29 were regarded as unquestionably defective, 11 of whom were certified under the Mental Deficiency Act, 1913; 6 were placed apart as doubtful cases and at the time of the return were still under special observation; and 14 were certified under the Lunacy Act as insane. Roughly, the percentage among these men is a little over 10 with various kinds of definite mental defect—i.e., less than the average estimate made of such cases among prisoners generally. These figures, applying only to cases of a prominent kind, have no great value in regard to the question of the mental powers of convicted prisoners as a class in comparison with those of the general law-abiding population; but they are very significant in so far as they show that a *special group* of 475 recidivist convicts, many of them with records of an abundance of serious crimes and of lives of which more than half had been spent in prison, was not more numerously signalised by definitely recognised mental defect than the less selected mass of prisoners in general.

STATISTICAL STUDY OF THE ENGLISH CONVICT.

In my further consideration of the part played by "mental defect" as a factor in the production of criminals, it is necessary to make some comments on the extensive and well-known work by the late Dr. Charles Goring, entitled "The English Convict—A Statistical Study," published by the Government in 1913, and again, in an abridged form, in 1919. This work had its origin in a certain number of anthropological observations made by Dr. G. B. Griffiths, of Parkhurst Convict Prison, some 19 years ago, mainly directed towards checking the facts alleged and the conclusions arrived at by the school of criminologists generally known as followers of the Italian writer, Cesare Lombroso. In process of time these observations were continued by other medical officers of prisons, but at last the scope of them was much extended, and the further conduct of the work was handed over entirely to Dr. Goring, who had followed Dr. Griffiths at Parkhurst Prison. The completed sets of very numerous observations made on a total of 3000 convicts were then tabulated and dealt with biometrically by Dr. Goring at University College, London. The immense amount of laborious care and ability displayed in this work is widely recognised, and the value of the information it contains is undoubtedly great. Its reputation, moreover, makes it impossible now for anyone who touches on this subject to pass it by without due attention; and I regret that, owing to the limit of this lecture, I must perforce confine myself only to some points in this treatise on which I differ from the author. Still more do I regret the incident that a controversy on those points was still proceeding in the *Journal of Mental Science* between Dr. Goring and myself when, last year, almost simultaneously with the publication of my reply to him, I received the unexpected and grievous news of his death.

The object of this extensive research is stated by the author to be twofold: (1) to clear from the ground the remains of the old criminology; (2) to found a new knowledge of the criminal upon facts scientifically acquired and upon inferences scientifically verified. As to the first-named topic no question of the author's methods and results need arise. It is with his handling of the second alone that we are directly concerned. It must be understood that the comments to which I must confine myself cannot approach to a full consideration of the matter dealt with by Dr. Goring under the heading I have mentioned. I can but touch on those parts only which seem to me of paramount importance.

(*a*) At the outset of this work it is stated by the author that

"it is impossible to assume a priori that the criminal is either 'born' or 'made,' or to what extent criminality results either from a constitutional quality of moral fibre or from purely traditional acquirement." "In other words," he says, "all we can assume, and what we must assume, is the possibility that constitutional as well as environmental factors play a part in the production of criminality. We are forced to a hypothesis of the possible existence of a character in all men which, in the absence of a better term, we call the criminal diathesis." And, further, he says that "we shall have to pursue our research with a mind open to the possibility that innate or constitutional as well as environmental factors play a part in determining the fate of the criminal." Later, in his opening chapter, he expresses the opinion that the conclusion is unavoidable that the "criminal diathesis," although present in greater average intensity among the lawless, is a certain constitutional fact common to the whole of humanity. But the author expressly states that he makes no presumption as to what qualities constitute the "criminal diathesis," the object of his inquiry being "to find out how far, as measured by criminal records, it (the 'criminal diathesis') is associated with environment, and training, with stock, and with the physical attributes of the criminal."

It seems to me after studying these statements repeatedly that this conception of a "criminal diathesis," which is assumed to imply (whatever its component qualities may be shown to be) a constitutional or innate tendency, common to all men but existing in a greater average degree among law-breakers, is obscure, and tends to confuse the issue of the ultimate conclusion of the argument which is directed towards the founding of a new knowledge of the criminal upon facts scientifically acquired and upon inferences scientifically verified. If this assumed and innate factor of a criminal diathesis were not resolved, as we shall presently see it has been resolved, to a certain extent, by the author into its component elements, it would amount to little more than a statement to the effect that the greater the constitutional tendency to crime, the greater would be the actual commission of crime. With this statement all could agree; it would be self-evident, though not elucidatory. We shall presently find, however, although further factors in the make-up of criminals are set forth by the author in this investigation as differentiating them from the non-criminal population, that one of those differentiating factors is an increased possession of wilful antisocial proclivities. So that the constitutional item of "wilful antisocial activities" comes in to form one element, apart from the others, in the definition of the "criminal diathesis"; and this diathesis itself is posited at the outset as constitutional or innate.

With part of what is said in the quotations I have just made I am in accord. I, too, start with an assumption, not of the "criminal diathesis" described by Dr. Goring as necessary to his argument, but of the position that all men are potential criminals, given the stimulus or temptation adequate to induce antisocial action. I think this is an inevitable assumption. No matter how "advanced" the state of "civilisation" or moralisation, or however great the so-called "social instinct," or, as I prefer to call it, the instinctive tendency to imitate and follow the majority may be, each individual human animal must still make efforts to keep his social conduct up to such a mark as to maintain within due bounds his primary and self-regarding desires and impulses. A man that can acquire and retain this faculty will, as a rule, avoid crime; and he will necessarily be the possessor of a better organised brain and nervous system than the man who cannot. The absence of the inheritable factor in the production of a criminal or of an average moral man is alike inconceivable. I have already enlarged on this point in my first lecture, where I also insisted on the coöperation of other factors as equally necessary, also in varying degree, to the production of the observable characters of nearly all men—i.e., of all men described precisely by the author of the "English Convict" as "normal," including, of course, criminal men. And just as under sufficient stress the tendency of the human brain to become disordered may be demonstrably actualised, so may a breakdown take place in that subtle mechanism which underlies and actuates the conduct and characters of men.

(*b*) The contents of Dr. Goring's work consist of a minute and wellnigh exhaustive study, by means of the biometrical method of statistics, of the following matters, relevant to his inquiry, and bearing closely on his exposition of what he terms the "criminal diathesis." These consist of (1) the physique of criminals; (2) age as a biological factor in crime; (3) the criminal's vital statistics—health, disease, mortality; (4) mental differentiation of the criminal; (5) the influence of the force of circumstances on the genesis of crime; (6) the fertility of criminals; and (7) the influence of heredity on the genesis of crime.

Factors of Crime Production.

As a final result of the examination of his extensive observations under each of these headings the author arrives at the following conclusions:—

(1) "That there is a physical, mental, and moral type of normal person who tends to be convicted of crime—i.e., that, on the average, the criminal of English prisons is markedly differentiated by defective physique, as measured by stature and body-weight; by mental capacity, as measured by general intelligence; and by increased possession of wilful antisocial proclivities, as measured, apart from intelligence, by length of sentence to imprisonment." (2) "That relatively to the origin in the constitution of the malefactor, and especially in his mentally defective constitution, crime is only to a trifling extent (if to any) the product of social inequalities, of adverse environment, or of any other manifestations of what may be comprehensively termed the force of circumstances."

It is clear that these conclusions must be accepted, provided that the premisses are not questionable. But the premisses, in so far as they concern the mental element in the production of crime, involve the postulated assumption: (1) that the factor of "mental defect" stands for defect of intelligence alone and is of innate origin; (2) that the remaining factor, described as "increased antisocial proclivity," is also of innate origin; and (3) that these two innate factors have been correctly established as at least predominant or as sole factors in crime production by the exclusion of all significant external influences which, as the author himself has said, ought to be regarded at the beginning of an inquiry as *possible* factors in determining the fate of the criminal or, in other words, as part factors of the criminal diathesis.

That I am of opinion that Dr. Goring has not succeeded in estimating "mental capacity" by his method of measuring "general intelligence" or, consequently, of establishing the wholly constitutional nature of "mental defect" will be apparent from what I have already said. As regards the factor of increased possession of wilful antisocial proclivities as measured by length of imprisonment, it seems to me that under this title are gathered other characters, generally regarded as mental by psychologists, but not reckoned as such by the author, and expressly excluded by him from his own concept of "mental defect." He regards this innate or "constitutional" factor as in a great degree concerned with the criminality of such malefactors as are not significantly characterised by either defective physique or defective intelligence, but only by the possession in excessive measure of this assumed innate quality which is not otherwise defined, and appears to me to lack any explanatory value. Surely apart from all discussion about "mental defect" as a factor of crime, wilful antisocial activity is crime. Shorn of his wilfulness the law-breaker is not criminal, though he may be such in the technical sense. But without this assumption of innate "wilful antisocial proclivity" on the part of the considerable proportion of criminals who show no defect either of physique or of intelligence, this class of criminals could not be regarded as the subjects of any constitutional mark relevant to their criminal conduct.

It is because I deem that some of the collected facts as dealt with in this research by the biometrical method are open to much dispute, and consequently entail some very disputable and, in my opinion, erroneous conclusions, that I have thought it necessary to make these comments, believing that the method employed is not fitted to the whole of the material handled by it in this investigation. Much of the material differs widely from that which can be definitely estimated by measurement. In this instance, indeed, the method, as Huxley said concerning another method and another matter, "may be compared with a mill of exquisite workmanship which grinds material to any degree of fineness, but what comes out of it depends upon what is put in."

While believing that in the production of the great majority of convicted criminals of all kinds an important part is played by the innumerable and often unobservable influences from without on the development of each individual's mental capacities, and thus on his conduct, I do not question the conclusion arrived at by a different route in "The English Convict," that convicted criminals are, as a body, of inferior intelligence to that of the average members of the community. Indeed, this is probably true of the mass of convicted criminals everywhere, who as a body, in the local prisons all over the country, give the impression to those conversant with them that they are more stupid than the majority of people of a similar status. Considering that a very large number of crimes are committed without detection of the perpetrators, it is at least highly probable that convicted criminals would be on the average much less alert, mentally, than those who succeed in eluding the police.

Conclusion.

I trust that in these lectures I have made it clear that my object has been to give reasons for my opinion that criminal conduct is dependent on the innate capacities of each individual as developed and actuated by the innumerable influences which act upon these capacities; and that the actual mental characters or qualities that we observe are the resultant of these factors. My position has been seriously misrepresented as an appeal to the emotions in favour of the notion that crime is wholly the product of environment, and as a denial of the part played by the constitutional or innate factor in the make-up of the criminal. But in stating my judgment that a theory of criminality which virtually excludes environmental influences in the development of the mental, moral, and social qualities in man, would necessarily lead to such a conception of crime as would logically, and I think practically, tend to discourage active measures directed towards reclaiming the criminal, I am not influenced, as has been suggested, by any consideration whatever as to the *consequences* of this or any other theory, but solely by my belief that this theory itself lacks both scientific truth and probability.

In my opinion the proper and fruitful understanding and treatment of criminals depends mainly on the careful study of the individual offender. I am further of opinion that this consideration should influence far more than it does at present the sentences awarded in courts of law, which are to an undue extent based on the class of crime committed, irrespectively of the history of the accused person, and of the circumstances in which the offence took place. I think, further, that no judge should pronounce any sentence of imprisonment unless he is personally acquainted by visiting prisons with the actual nature of the terms of imprisonment entailed by his sentences.

CONTRIBUTIONS TO A DISCUSSION ON PREGNANCY AND LATENT SYPHILIS.

Being Papers Read at the Meeting of the Section of Obstetrics and Gynæcology of the Royal Society of Medicine on Nov. 4th, 1920.

I.—THE INTER-RELATIONSHIP BETWEEN PREGNANCY AND SYPHILIS.

BY R. A. HENDRY, M.D. LOND.,
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ALTHOUGH so much has been written concerning the inter-relationship between pregnancy and syphilis, I feel that no apology is needed for bringing forward data collected at some ante-natal clinics in Liverpool between April, 1916, and July, 1920. The cases which I am bringing foward relate to what may be called latent syphilis, in that, apart from the effect on the pregnancy, there are no active clinical symptoms or signs of syphilis. As this condition excludes primary and secondary syphilis, diagnosis is the obvious preliminary step—and the obvious preliminary difficulty. For its solution we have to rely on: (1) the clinical; and (2) the laboratory evidence; these may be further subdivided into the history of infection and the past obstetrical history, together with the Wassermann reaction and the examination of stillbirths, abortions, and placentæ. A history of primary or secondary syphilis is difficult and rarely possible to obtain; its absence is of no value.

Value of Obstetrical History.

In Table I., graphically expressed, is a series of obstetrical histories selected from cases investigated, some syphilitic, others non-syphilitic.

The feature of the first eight is abortion; in two preceded by a living infant.

The absence of syphilis is sufficiently proved in Co by the maternal death from cerebral hæmorrhage, a sequel of chronic nephritis, no evidence of syphilis at the autopsy, and the repeatedly negative Wassermann in both husband and wife (moreover, the father had six healthy living children by his first wife); and in Da by the lack of any evidence of syphilis in the last three fœtuses born between the twenty-fourth and twenty-eighth week of gestation, and by the repeatedly negative Wassermann in husband and wife.

In Wa a non-syphilitic, macerated, premature fœtus following two abortions accompanies a "Positive +" Wassermann.

Y and F are sisters, ages 24 and 26; both aborted in the third month, 12 and 18 months ago. They are now six and seven months pregnant. The Wassermann in one is "negative," in the other "positive +."

E and Hg have had six and five abortions in the third month. They came under observation six and seven months pregnant. The Wassermann is "Positive +" in each. They had premature infants, one of which thrives ($1\frac{5}{12}$ years); the other only lived four days.

McD, with a "positive" Wassermann, contrasts with Da.

Mg is a non-syphilitic negress whose treatment was limited to iron.

Hs reported alternating abortions and living children; Wassermann "positive." She declined treatment, became pregnant, and had an infant which only lived two hours; she then returned for treatment: the infant was not available for examination.

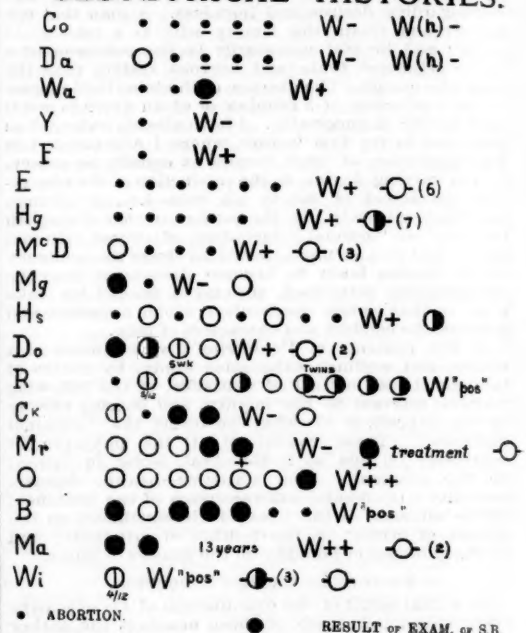
A few preliminary abortions would convert Do into a text-book history, which in this series is conspicuous by its rarity.

R was an unpleasant surprise; only three children out of eight lived for more than a few months; many of the labours were instrumental, all were difficult; with this history pelvic contraction was sought and confirmed; an induction at 36 weeks was followed by a reasonably easy labour, but the $6\frac{1}{2}$ lb. male infant only lived three hours. The Wassermann then examined, was "positive"; the fœtus, in spite of an unusually thorough examination, was negative.

Ck suggests syphilitic infection after the first pregnancy; with a "negative" Wassermann, treatment was limited to iron and was followed by a healthy and thriving infant.

TABLE I.

OBSTETRICAL HISTORIES.



Mr was one of the first cases in which a "negative" Wassermann accompanied a positive fœtus. By an unfortunate lack of coördination the result of the examination of S.B. No. 2 remained with the laboratory worker; the Wassermann result, obtained some months later, remained with the clinician. S.B. No. 3 then appeared, and on inquiry it was found that the Wassermann had been negative at six months. To find out when, if ever, the Wassermann became "positive" it was proposed to make weekly examinations; four days after labour the Wassermann was already "positive." A living infant has since been born.

O's seventh child was still-born; the first six are living; the still-birth was not examined. As the Wassermann was "positive + +" she was referred to a V.D. clinic.

B's first infant was macerated, her second is living; then followed three, not macerated, still-births, and two abortions. As the Wassermann was "positive" she was referred to a V.D. clinic; no subsequent pregnancy has been recorded.

Ma had two macerated infants by her first husband; 13 years later she remarries and becomes pregnant, Wassermann "positive + +" at the second month; a healthy infant was born at term.

W is a neurotic individual with interstitial keratitis, deafness, and suspiciously pegtop teeth, and, when three months pregnant, a "positive" Wassermann. Her first child had died of "meningitis" at four months. Her second, after five months' treatment, was born at $8\frac{1}{2}$ months and lived ten days; the family doctor considered it a congenital syphilitic. The Wassermann two months later was "negative." Treatment was continued, and seven months later, when two months pregnant, the Wassermann was again "positive." She now has a thriving baby.

In the first 57 cases where a diagnosis of latent syphilis was made, the obstetrical history was analysed in detail; 48 abortions and 75 stillbirths occurred—a total of 123 ante- and intra-natal deaths—as compared with 96 live births, of which 33 died, at least 9 of the 33 during the neonatal period. This analysis, with the table already considered is, I think, sufficient to show that the obstetrical history is not a reliable guide in any given case.

Value of Laboratory Evidence.

The laboratory evidence is practically on two counts—the Wassermann reaction and the examination of stillbirths, abortions, and their placentæ. The Wassermann reaction is at present the evidence on which we have chiefly to rely.

Between April, 1916, and July, 1920, 348 reactions have been examined for me in connexion with these clinics, 173 were "positive" and 175 "negative." A closer analysis of these is interesting. Up to the end of 1918 65 positive and 88 negative were reported. About this time two changes occurred: firstly, after August, 1918, the Wassermann results, hitherto reported as a straight "positive" or "negative," were reported in four grades—"negative," "slightly positive," "positive +," and "positive ++"; secondly, as the result of a few surprises, the blood was examined in practically all cases where stillbirth was not the obvious result of dystocia, and where abortion had occurred in the last pregnancy or had been repeated. I expected a larger percentage of negatives. From January, 1919, to July, 1920 (inclusive), 63 "positive + or ++" and 87 "negatives" were reported, a singularly close agreement with the earlier figures of 65 and 88. In addition, 45 were "slightly positive," the significance of which is open to discussion. My colleagues on the venereal side, I understand, disregard a "slightly positive" until they can have a repeat test, possibly after a provocative injection. They are in the happy position of being able to "wait and see," the obstetrician sees "full-term" approaching steadily and can only delay treatment at the expense of the fœtus.

While the possibility of a "negative" Wassermann during pregnancy is now well known, its frequency is problematical; seven such cases have been found, chiefly during investigations in the department of obstetrics in the University of Liverpool. On the whole, I think it is reasonable to consider that a Wassermann reported "positive" in any degree justifies the institution of antisyphilitic treatment, but that such patients should not be pressed to attend a venereal clinic, as some—one need not guess at a percentage—are not syphilitic, and the consequences of such pressure might be serious. Moreover, difficulties may arise when, as sometimes happens, the blood is examined for the venereal clinic in a different laboratory using another technique; in fairness, it must be stated that the results usually agree, but at least two patients have been referred to venereal clinics with a Wassermann reported "positive +," and the blood on examination in a different laboratory reported "negative." I need not describe the patients' comments. Positive evidence in the fœtus—*Spirochæta pallida*, chondro-epiphysitis, and, more or less masked by the post-mortem maceration, changes in other organs, notably the liver, spleen, and lungs—is generally held to be reliable. Negative evidence in the fœtus, in my experience, is equally reliable.

In abortions, particularly the early ones, conclusive evidence of syphilis is rarely obtained in the fœtus; there does not as yet seem to be unanimity in regard to what is acceptable as reliable evidence in the placenta and membranes. The drawback in regard to this evidence is on the score of quantity rather than quality; in the past it has been rarely available; in the future, owing to the fact that so many fœtuses are now being examined, it will be much more widely obtainable, and, in time, will result in the earlier institution of treatment.

Results of Treatment.

Turning now to the treatment, the results of which are shown in Table II. in three series. Firstly, those who had no treatment. The majority of these came under observation soon after the event; in some the pregnancy terminated before treatment could be instituted; others did not attend after the blood was taken for examination. Secondly, those where treatment was begun during the pregnancy. Table III. shows the period at which treatment was begun. Thirdly, those under treatment when the pregnancy began. The two "negative" Wassermanns in "stillbirths, no treatment" accompanied positive fœtuses. One patient appears in "living infants" twice. On the first occasion Wassermann "negative," one injection of galyl; on the second, Wassermann "slightly positive," no treatment. Exception might be taken to the inclusion of this case were it not that a definite history of infection, confirmed by a syphilologist, accompanied her. The arsenobenzol derivatives were not used, as the clinics were held in premises loaned for the few hours necessary, and no provision could be made for cases requiring to be kept under observation for some hours in the event of mishap.

TABLE II.—*Results and Wassermann Reactions.*

—	Abortion.	Stillbirth.	Neonatal death.	Living infant.
No treatment 43	15 Pos. 6 ,, sl. 8 ,, + 1	17 Pos. 3 ,, sl. 4 ,, + 5 ,, ++ 3 Neg. 2	4 Pos. 2 ,, sl. 2	7 Pos. 1 ,, sl. 5 ,, ++ 1
Treatment begun... 40 (5) (4g)	2 (1g) Pos. 2 (1g)	4 (1) (1g) Pos. 3 (1g) ,, sl. 1 (1)	5 Pos. 3 ,, sl. 1 ,, + 1	29 (4) (2g) Pos. 6 (1) (1g) ,, sl. 10 (1) ,, + 9 (2) ,, ++ 3 Neg. 1 (1g)
During pregnancy				
Under treatment ... 11 (1) When pregnancy began				11 (1) Pos. 5 (1) ,, sl. 2 ,, + 3 Neg. 1

TABLE III.—*Period of Gestation at which Treatment was Begun.*

Abortion.	Stillbirth.	Neonatal death.	Infant living.							
				29 (4) (2 g)						
2 (1 g)	4 (1) (1 g)	5		Month.						
				1	2	3	4	5	6	7	8
mo. P. 1 ,, 4 (g)	mo. P. 3 (1 g) 5 ,, sl. 1 (1) 4	mo. P. 3 3, 5, 7 ,, sl. 1 7 ,, + 1 6	P. 6 (1) (1 g)	1 (g)	2	1	1 (1)			1	
			,, sl. 10 (1)		2		3		2	3 (1)	
			,, + 9 (2)			1	3 (2)	2	2		1
			,, ++ 3		1						2
			N. 1 (g)						1		
				1	5	2	7	2	5	4	3

P. = positive. N. = negative. ( ) = Treated at V.D. clinic
(g) = Treated by galyl.

Mercury was therefore the remedy adopted. Four cases in the early days had galyl (three had one injection each, one had three). As they had to be sent up to hospital for these and sometimes forgot their appointment, or the obstetric assistant, who gave the injections, was on the district, it was not found practicable and was abandoned. For two years I persevered with intramuscular injections of grey oil, but the slight stiffness resulting caused so many complaints—with, I believe, little foundation—that it was abandoned, except in a few cases, in favour of hydrarg. cum creta, gr. i. thrice daily by the mouth. When the venereal clinics were established, many cases were referred to them for treatment; for various reasons these women did not report at the antenatal clinics and only six results are to hand for this table—they are included in the totals but are indicated separately by the figures in the brackets.

It is necessary to avoid confusion between post hoc and propter hoc when considering the results of treatment in such a disease as syphilis. The first group is a reminder that apparently healthy children may be born

at term without any treatment. There can be no doubt that if treatment had not been instituted in the second group there would have been some live births, the date of the pregnancy at which treatment began ranged from the first to the eighth month; one patient, after six abortions all under 12 weeks, began treatment at 26 weeks and had a surviving baby at 33 weeks. Any division of this group into satisfactory and unsatisfactory treatment is open to abuse. The benefit of the treatment can be stated much more positively in the third group, as these cases had graduated through the first two groups, where they swell the totals on the wrong side of the line.

Conclusions.

The following conclusions are, I think, justified: (1) that the clinical evidence of syphilis is unreliable; (2) that the Wassermann reaction is the test by which, at present, the diagnosis must usually be made; it must be borne in mind that a "negative" or a "slightly positive" reaction may accompany syphilis during pregnancy, and, moreover, that a "positive" may occur in a non-syphilitic individual; (3) that the examination of stillbirths, &c., furnishes reliable but, at present, insufficiently available, evidence; (4) that the institution of mercurial treatment before the pregnancy justifies a favourable fœtal prognosis; (5) that the prognosis when treatment is begun during the pregnancy depends on the unknown and already present degree of infection of the fœtus.

II.—SPIRILLOLYSIS AND ITS CAUSATION.

BY AMAND ROUTH, M.D. LOND., F.R.C.P. LOND.,
CONSULTING OBSTETRIC PHYSICIAN TO CHARING CROSS HOSPITAL.

Dr. Hendry's 94 cases of latent syphilis during pregnancy will help to elucidate the many doubtful problems surrounding the subject, such as the causes of the latency of the infection, the anomalies and irregularities of the Wassermann reaction in both mother and child, and the determination of the best methods of treating both mother and child during and after the pregnancy, so as to cure the mother and prevent congenital syphilis in the child.

Previous to the discovery of the infecting agent of syphilis, and the Wassermann reaction in 1905–06, and of salvarsan and its arsenobenzol substitutes since 1909, obstetricians were familiar with cases of women who had repeated abortions, or stillbirths, or who had borne living but syphilitic children. Unless there had been evidence of primary or secondary symptoms, often entirely absent, in these women before or during the pregnancies, it was often impossible to get any clinical evidence of syphilis. The husband perhaps gave a history of previous syphilis, often six or eight years before marriage, and had remained perfectly well. In the absence of the Wassermann test for the father, mother, and surviving children, and of any knowledge of the presence of the *Spirochæta pallida* in the tissues of a stillborn fœtus, a diagnosis of syphilis was hardly ever certain, and treatment by mercury in private practice, such as that adopted by Dr. Hendry in his series of hospital cases, could only be adopted with difficulty owing to the hostility of the father to the view taken of the origin of the stillbirths. As a result, however, of giving mercury to the mother during the pregnancy healthy children were born, but it was rarely possible to continue treatment to mother and child after the birth, and if other healthy children were desired, it was necessary to repeat the treatment of the mother in each successive pregnancy. If this was not agreed to the next child was infected.

It was noticed, however, in untreated cases that the virulence of infection in successive pregnancies appeared to be reduced, the woman's early abortions being succeeded by stillbirths, then living children becoming clinically syphilitic in a few weeks or at puberty, or the mother even getting a healthy child at the end of such a sequence, or even more rarely getting a healthy child during a series of stillbirths.

When the Wassermann reaction was discovered it was fully expected that it would prove to be positive in all women during pregnancy if they had had, or were about to have, a syphilitic child, and that the child, born alive, but destined to become clinically syphilitic in a few weeks, would, like its mother, prove to be positive. Instead of this, many of these cases are negative, a fact which could not be explained satisfactorily. I had often wondered why such an infection as syphilis, more severe 30 years ago than now, should ever allow a pregnant woman even after the admittedly salutary sequence of several pregnancies, to have a living, and apparently a healthy child. Mr. J. E. R. McDonagh had also noticed this point. It was evident also that there was a modification of the clinical evidences of syphilis in pregnant mothers, even though they were having dead or diseased children, but how could it be explained?

When the *Spirochæta pallida* was discovered in 1905 the puzzle became more difficult, for the mature organism was found to be larger than the spermatozoon's head, and was a large infecting agent relative to the mature ovum. If an ovum was able to be infected at the moment of fertilisation viâ the paternal semen, or by spirochætes in the mother's tissues previous or subsequent to fertilisation, it was impossible to understand why such a large infecting organism, capable of unlimited multiplication, did not invariably destroy the delicate early embryo, or to explain how such infected fœtuses ever survived their birth—to explain, in fact, how the infection of syphilis tended to become latent during pregnancy.

Spirillolysis.

It is known now that the spiral of the mature spirochæte is able under the action of various substances, or even by a spontaneous spirillolysis, to break up into "granules," generally by a transverse division. Noguchi has observed that in pure cultures under certain conditions enormous numbers of minute granules occur, and that from these granules, after transference to a passive culture medium, spiral forms again sprout out; and in a remarkable article in the *American Journal of Syphilis* in April, 1917, he stated that he had made a series of cultures from recurring "granules" between 1910 and 1917 at the Rockefeller Institute, and was able from some of the strains to infect monkeys and rabbits from the resulting mature organisms.

These and many other facts which I stated in my Harveian address, printed in THE LANCET (Jan. 12th, 1918), make it probable that the spirochæte may become granulosed during pregnancy, and it also makes it possible that in some cases infection may be by means of the granules and not by the mature organism. According to Sir Frederick Mott, Neisser, in his experimental investigation on apes, has observed that the tissues of infected animals in which no spirochætes were demonstrable, could nevertheless be used effectually for inoculation.

Chorionic Ferments.

The further problem is to determine the agents which nature has provided for this spirillolytic action on the S.P. during pregnancy. It is evident it must be some agent which is present very early in pregnancy, in order to prevent almost immediate destruction of the fertilised ovum infected by the *Spirochæta pallida*. Such agency must also continue in action during the pregnancy, or there would be no chance of a child being born alive or of surviving in utero long enough to be treated through its mother. As far back as 1914, in my evidence before the Royal Commission on Venereal Disease, and in my Harveian address in 1918, I ventured to suggest that the chorionic ferments or "syncytial toxins" or their derivatives have this granulosing power. These ferments of the chorionic villi are intended for trophoblastic purposes to facilitate the burrowing of the fertilised ovum into the uterine mucosa at the placental site. Any excess of the syncytio-toxins is apparently controlled or neutralised by so-called syncytio-lysins, as a result of the trophoblastic action on the maternal tissues. Failure of such control may be the cause of the various serious auto-toxæmias of pregnancy.

If the chorionic ferments are able to exert a destructive or digestive action on the local, probably prepared maternal tissues, it would probably be able to act chemically on the spirochæte, and make it break up into granules. The resulting granules are, I believe, kept

biologically inactive by the ferments and remain "latent," so that they do not "sprout" or multiply in the tissues of the maternal or fœtal portions of the placenta so long as the chorionic ferments are present, and no mature spirochætes are able in an ideal case to pass from mother to child or vice versa, and the infection would during the pregnancy remain latent.

After pregnancy chorionic ferments gradually disappear from both the maternal and fœtal tissues (according to Abderhalden they cannot be detected in the maternal blood more than 15 days after parturition), so that the biological activity of the granules may be resumed and the mature organism may become developed.

Irregular Wassermann Reaction: Absence of Spirochætes in Abortion.

Syphilitic infection rendered latent by the chorionic ferments explain several anomalies of the Wassermann reaction. Thus, a pregnant woman, who in due course has either a stillbirth or a living syphilitic child, may sometimes have a negative Wassermann reaction during pregnancy and for some weeks afterwards, for she will only have been infected by the latent granules and not by a mature active spirochæte. I believe this negative reaction in the mother can only occur in cases where the ovum has been infected by the father's seminal fluid. After some weeks, when the chorionic ferments become absent, spirochætes may develop and the woman's reaction may become positive owing to enough antibodies being produced in her body to excite a general reaction in her tissues and blood. The child, also, of such a mother would be negative at birth, and if the granules had been completely destroyed by the chorionic ferments, would remain negative; or if the granules had not been destroyed, they would become capable after birth, in the absence of chorionic ferments, of sprouting to form the mature organism, and the reaction would become positive shortly before the clinical evidences appear. It is also possible that a previously syphilitic woman, positive during pregnancy, may have a child born with a negative reaction, if the chorionic ferments or salvarsan, or both, have granulosed her spirochætes and thus prevented them from invading the fœtal tissues.

Dr. Eardley Holland and others have stated that spirochætes are rarely found in early abortions even when expelled from a pregnant woman who has had syphilitic stillbirths crowded with spirochætes. This is a strange fact. I think the explanation is that spirillolysis has occurred, but has not prevented early fœtal death owing to the presence of enormous numbers of granules which, if looked for, might be found, and in suitable media be further developed in vitro.

Infection through the Semen.

The possibility of the ovum being fertilised and infected by the semen, and of the woman being infected through the fœtus is not yet proved, but I believe it is true, for minute granules could be readily conveyed by the spermatozoa or in the seminal fluid and kept latent by the chorionic ferments. Sir Frederick Mott pointed out in 1914 that the spirochæte may be one form of the syphilitic organism, and that there may be other minuter stages analogous to the spores of bacilli, and he suggests that "these 'chromidian granules' may infect the head of the spermatozoon and subsequently multiply and produce the syphilitic lesions." I have assumed that this infection occurs by means of granules resulting from spirillolysis, which are kept latent during pregnancy. If, however, the mature organism were conveyed by the semen, it would be promptly granulosed by the ferments, and both the fœtus and the mother would only be infected by the granules, and both would have negative reactions immediately after parturition and as long as the inhibition of the chorionic ferments was present.

Intervening Healthy Children: Colles's Law.

The occasional birth of an apparently healthy child amongst a series of dead or infected children can be explained by the chorionic ferments destroying absolutely the granules formed by its spirillolytic action. Colles's law is founded on the fact that women infected before or during the course of their pregnancy cannot therefore be reinfected. As Sir Frederick Mott has said, "Every syphilitic child has a syphilitic mother." If a woman is already syphilitic before her ovum is infected her reaction will be positive, and she cannot be reinfected by her child. If the woman has a syphilitic husband who has infected the ovum at fertilisation she may become infected through the fœtus and become positive if the chorionic ferments fail to protect her from spirochætal infection; or both she and the child may be protected during pregnancy by the chorionic ferments granulosing the mature organism, and both may remain negative till after the store of chorionic ferments are exhausted after parturition. In both of these groups the child, if alive after birth, could not infect the mother, but might infect another woman during lactation.

There is still a difficulty in diagnosis in cases where the mother's Wassermann reaction is negative in the absence of reliable evidence of previous congenital syphilitic offspring and of any history or evidence of syphilis in the mother.

Congenital Syphilis.

As Dr. T. H. C. Stevenson, Superintendent of Statistics to the Registrar-General, stated in his evidence before the Royal Commission on Venereal Disease in 1914:—

"The worthlessness of the returns in death certificates as an absolute statement of the number of deaths from venereal disease scarcely requires demonstration." "Venereal disease to a considerable extent is hidden under other items of the official classification, and infants' deaths returned under 'congenital debility' and other headings (such as 'marasmus,' 'infantile atrophy,' and 'prematurity') are largely due to syphilis."

I doubt if it is realised how frequently congenital syphilis occurs in our industrial cities. I will only quote one set of statistics given by Dr. Helen Campbell, chief medical officer of the infants department of the Bradford health committee, on the effects of congenital syphilis on infantile mortality in Bradford in 1918. Of 2172 infants under observation in 1918, 1606 were registered during the year, and of these 148 died, 107 out of the 1441 legitimate children, and 41 out of 165 illegitimate. Of these 148 infantile deaths, 120 were those of syphilitic infants, 81·08 per cent. of the total deaths. Of the 107 legitimate children who died 83 (77·5 per cent.) had congenital syphilis, whilst out of the 41 illegitimate children who died 37 (90·2 per cent.) had syphilis. Dr. Helen Campbell shows that these startling figures "are due to the fact that congenital syphilitic infants are peculiarly selected for attack by respiratory, gastro-intestinal, and specific (e.g., measles) infections, which kill them in much larger numbers than infants not so affected." The congenital syphilitic child with a positive Wassermann reaction is apparently rarely cured, and Mr. Charles Gibbs told me in 1917 that he had never known a positive reaction in a congenital syphilitic child become negative after treatment. What then becomes of these children? Do 80 per cent. die during their first year of life as in Dr. Helen Campbell's cases? If so, prevention is essential.

Treatment.

The treatment of syphilis in the pregnant women has two objects in view—to cure the mother and to prevent her child being a congenital syphilitic. Treatment is, in my opinion, only likely to be successful if up to the date of its commencement the multiplication of the mature spirochæte has been prevented by the granulosing and inhibiting action of the ferments, for if unrestricted infection by the mature organism had been going on in the early cellular ovum or fœtus it would have been speedily destroyed, for every growing organ would have been invaded. The surgeons at the Female Lock Hospital and such pioneers elsewhere as Mr. John Adams, Dr. J. H. Sequeira, Dr. Morna Rawlins, and Dr. Hendry, with some variations in their methods of treatment have had extremely good results, showing that children of syphilitic mothers can remain healthy for more than twelve months after their birth. This is a result which few of us have anticipated and should encourage everyone working on the subject.

I hope the discussion will show what advantages salvarsan or its substitutes have over the old or present mercury methods in the treatment of pregnant syphilitic women. Sir Frederick Mott has quoted O'Farrell and A. Balfour to show that injections of salvarsan cause shedding of granules from the S.P., and would thus, I suggest, increase the action of the ferments. If these granules are not destroyed but only rendered latent, clinical syphilis will follow, just as may occur after the action of chorionic ferments has ceased. Whatever the treatment may be, it should be adopted at the earliest possible moment, though cures appear to have followed when injections have been made in the later months. Four cases have been recorded by Dr. Morna Rawlins where successful treatment was begun at the seventh and eighth month. It would seem that this could only have occurred where spirillolysis, and inhibition of the granules, had occurred up to that date by the action of the chorionic ferments, or where partial or complete destruction of the granules had taken place before the injections were begun.

The question also of the continued treatment of the new-born children of these syphilitic mothers, often with negative Wassermann reaction in the mother and child, needs consideration, for the modern treatment varies, some thinking that treatment during lactation may be still effected through the mother. If the child is treated separately after birth the question also arises whether it should be treated by injections of galyl, or by mercury, as Dr. Rawlins, I believe, prefers, or iodide of potassium, as Dr. C. J. Macalister of Liverpool advises.

It seems obvious that in many cases the father may need treatment also, and that the mother and the child should not be allowed to drift away, but should be seen occasionally for tests and for treatment where necessary. The actual treatment of pregnant women infected by syphilis is now rarely carried out by obstetricians, but the principles of treatment and the frequent latency of syphilitic infection during gestation should be clearly realised by both general practitioners and specialists, for the mother's and child's welfare is in their hands. I believe congenital syphilis could be prevented in all well-organised health centres if every expectant mother came under scientific medical supervision, and if facilities for diagnosis, and for both efficient and sufficiently prolonged treatment of mother and child were available. This is what the Ministry of Health is endeavouring to organise.

III.—RESULTS OF THREE YEARS' TREATMENT OF SYPHILITIC MOTHERS AND BABIES.

BY JOHN ADAMS, F.R.C.S. ENG.

JUST two years ago I read a paper before the Obstetrical Section of the Royal Society of Medicine on the Treatment of Ante-natal and Post-natal Syphilis. At that time I was only able to give the results of one year's treatment, and a wish was then expressed that I should report the progress of these cases at some future date. I now lay before you a table giving the full results of all cases treated during the past three years at the Thavies Inn Venereal Centre for pregnant women as far as it has been possible to follow them up. I quote from my former paper.

"I am aware that one year is too short a period in which to bring the treatment of ante-natal and post natal syphilis to perfection and that the treatment adopted to-day will be improved on to-morrow."

This statement has been fully confirmed during the past two years. I have been able to follow up most of the cases and to show, last November, to the Fellows of the Hunterian Society many of the babies up to 2 years old, all of whom appeared perfectly healthy and showed a negative Wassermann test. On one occasion only a baby showed a doubtful positive Wassermann reaction after once becoming negative.

In each year the percentage of babies born with a negative Wassermann reaction has increased as shown by the statistics which I have given. I attribute this result to the more active treatment the mothers receive before confinement, and the more general use of salvarsan in pregnant syphilitic women than formerly. I look forward with the greatest confidence in the future to see the wastage of infant life from syphilis almost come to a vanishing point. At present it is doubtful if any disease, even tuberculosis, is so destructive to child life or so disastrous to child health as syphilis. Most of the mothers enter Thavies Inn at about the sixth month of pregnancy, having been sent there on a diagnosis of syphilis, made either on clinical evidence or on the Wassermann test. Some have been treated with mercury and arsenic, and in consequence have no obvious lesions, others have had no treatment whatever. Practically all are in the secondary stage of the disease.

The results of treatment are most encouraging, though, of course, they vary with the period before confinement at which it is begun. In the last two years there has been only one stillbirth and no deaths from syphilis among the cases treated. My experience has been that if the mother's Wassermann test can be brought to negative or doubtful at her confinement the baby will be born negative and show no sign of syphilis. If the mother is positive or strongly positive the baby will probably be positive too, in which case, of course, vigorous antisyphilitic treatment is begun at once. However, in a case at present under my care, in which a definite history was obtainable that infection took place about seven months after conception and no treatment was given before confinement, the baby was born negative, although at the time the mother had generalised syphilis, as shown by a strongly positive Wassermann reaction. Cases of this kind open up questions as to the cause of the baby's immunity.

None of the babies born negative have since become positive, nor developed any signs of syphilis, though many have not had any treatment beyond the drugs they absorb through their mother's milk.

Table Showing Result of Treatment of Women During Pregnancy and of the Newly-born Children at Thavies Inn Venereal Centre for Pregnant Women.

Years Sept. 1st to Aug. 1st.	Mothers admitted with syphilis.	Babies born alive. Wassermann reaction.		Babies dying of syphilis.	Fœtus stillborn from syphilis.
		Positive.	Negative.		
1917–1918	28	17	6	3*	5
1918–1919	30	8	21	1 (2 months.)	1
1919–1920	37	1	36	None.	None.

* At the ages of 3, 14, 36 days respectively.

Treatment of Babies.

—	Wassermann test of—		
	Mother.	Placenta.	Baby.
Treatment	+	+	+
	+	+	−
	+	−	−*
No treatment	−	−	−

* Does not usually require full course of treatment.

(A) Intramuscular galyl in glucose. (B) Intramuscular Hg.

	(A)	(B)		(A)	(B)
1st day ...	1·5 cgm.	—	22nd day ...	2 cgm.	⅓ gr.
8th ,, ...	1·5 cgm.	⅓ gr.	29th ,, ...	—	—
15th ,, ...	—	—	36th ,, ...	2½ cgm.	⅓ gr.

Oral.—½ gr. daily Hg c. cret.

1st Wassermann Test.

	(A)	(B)		(A)	(B)
43rd day ...	—	—	64th day ...	3 cgm.	⅓ gr.
50th ,, ...	2½ cgm.	⅓ gr.	71st ,, ...	—	—
57th ,, ...	—	—	78th ,, ...	3 cgm.	⅓ gr.

Oral.—½ gr. daily Hg c. cret.

2nd Wassermann Test.

Nearly all babies become negative before or at this period.

120th day, Wassermann.
,, ,, 5 cgm. ... ... ⅓ gr. } Intermediate treatment.
134th ,, 5 cgm. ... ... ⅓ gr. }
176th ,, Wassermann.

Should the Wassermann be definitely positive at any future time begin *de novo* with treatment.

To summarise I may say that a pregnant woman with syphilis, whether active or latent, if treated for three or four months before her confinement, will probably be delivered of a healthy child at full term.

EXPERIMENTS WITH CEREBRO-SPINAL FLUID.

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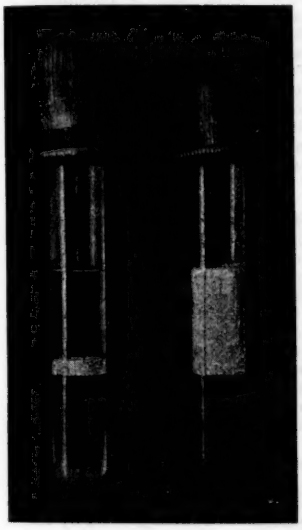
IF to 2 c.cm. of cerebro-spinal fluid 2 c.cm. of either benzene, toluene, or xylene are added and the mixture shaken for a few minutes and centrifuged, allowed to settle, and then shaken and centrifuged again, the results depicted (Fig. 1), where A is a normal fluid and B a fluid from a case of degenerative encephalitis (G.P.I.), will be obtained. In A the hydrocarbon has remained at the top unaltered, the cerebro-spinal fluid has become slightly opaque and is separated from the hydrocarbon by a narrow hydrocarbon-protein band. In B the contents of the tube are divided into two, an upper broad band of hydrocarbon-protein and a lower opaque cerebro-spinal fluid. In meningeal cases the cerebro-spinal fluid will approach A if the lesion is wholly meningeal and B if the lesion includes some degeneration of nerve tissue. In pure vascular lesions the cerebro-spinal fluid behaves as normal. What has just been described occurs if the fluid is so treated the day after it has been withdrawn. If the test is carried out immediately after withdrawal a normal fluid will give no hydrocarbon-protein band, and the band will be only half the width in a fluid from a case of degeneration. If done two days after withdrawal the band will be only slightly increased in width in a normal case, but in a degenerative case (tabes, &c.) the contents of the tube will be divided into two, as occurs in G.P.I. When a normal fluid so treated is pipetted off it will give the globulin reaction with ammonium sulphate, a positive or anticomplementary Wassermann reaction and a negative gold-sol test. If the fluid is pathological the globulin reaction will be very marked, the Wassermann reaction will be more positive, anticomplementary, or negative, and the gold-sol curve will be lessened. The complement-fixation test is most likely to become negative in degenerative cases where ordinarily it would have been markedly positive. In some cases the reaction may be masked by a reduction of the hæmoglobin—an occurrence met most frequently with normal fluids which have been allowed to stand some days before being tested. Fluids from cases of degenerative encephalitis will ultimately reduce hæmoglobin if kept long enough (several weeks at 0° C.).

FIG. 1.—*The Hydrocarbon Test.*



A is a normal cerebro-spinal fluid which has been shaken with toluene and then centrifuged. A narrow hydrocarbon-protein band is depicted separating the clear hydrocarbon above from the slightly opalescent cerebro-spinal fluid below.
B is a cerebro-spinal fluid from a case of degenerative encephalitis. The contents of the tube are divided into two: an upper hydrocarbon-protein band and a lower opaque cerebro-spinal fluid.

So far as the various reactions are concerned, similar results to the above are obtained if two drops of formaldehyde (40 per cent.) are added to 1 c.cm. of cerebro-spinal fluid. Shaking cerebro-spinal fluid with kaolin (1 per cent. emulsion) practically makes no alteration in the case of a normal cerebro-spinal fluid, but in a pathological cerebro-spinal fluid it makes all the reactions more positive with the exception of the gold-sol test, which it diminishes. I have examined a series of fluids so treated with an Abbé's refractometer at 17° C. Very little difference, if any, was found in the readings between normal and pathological fluids. The average reading was 1·3353. Shaking with a hydrocarbon usually increased the reading by 0·0004. Kaolin (1 per cent. emulsion), which has a refractive index of 1·3354 at 17° C., made practically no alteration. Formaldehyde, which has a refractive index of 1·3778 at 17° C., naturally raised the refractive indices of cerebro-spinal fluids, but proportionately less so than it raised that of water and more so than it raised that of serum. Therefore the change in the reading was greater the more normal the fluid, showing that the more protein the fluid contained the more formaldehyde it took up. Next, various cerebro-spinal fluids were examined ultramicroscopically and all three measures were found to increase colloidal activity, the number of particles and sometimes the refractility of the particles. Treating with formaldehyde had the greatest effect, then shaking with a hydrocarbon, and lastly shaking with kaolin. As these manœuvres altered the physical state of the protein particles so as to make albumin behave as globulin, &c., and as the actions were apparently surface ones, proved by the fact that the precipitation of colloidal gold was diminished, I then tested the effect of acids and alkalis on normal and pathological fluids, both alone and shaken with a hydrocarbon. Adding 1 drop of ammonia to 1 c.cm. of normal cerebro-spinal fluid makes it go slightly opaque; no ring is given with ammonium sulphate, and on shaking the mixture the opacity goes. The complement-fixation test is rendered anticomplementary, and there is no precipitation of colloidal gold even if the fluid is left standing and tested again in three days' time.

Ultramicroscopic examination shows a slight increase in the number of the particles, and an increase in the size of some of them. Shaking with a hydrocarbon makes no alteration in the results of the reactions, and there is a decrease of the hydrocarbon-protein band. If a fluid from a case of degenerative encephalitis be so treated, a ring is given with ammonium sulphate. The complement-fixation test is rendered anticomplementary, and there is only a slight precipitation of colloidal gold if the fluid is tested three days after it has been treated with the alkali. Shaking with a hydrocarbon reduces the band to that typical of a normal fluid. Adding 1 drop of acetic acid to 1 c.cm. of normal cerebro-spinal fluid causes no opacity, but a ring is obtained with ammonium sulphate.

In the complement-fixation test such a fluid reduces the hæmoglobin. If less acid is used the result is anticomplementary, and if still less acid markedly positive. The precipitation of colloidal gold occurs in the first tubes, and tends to approach what is obtained with a cerebro-spinal fluid from a case of degenerative encephalitis. Ultramicroscopic examination shows a slight increase in the number of the particles, an increase in size and a clumping together of some of the particles, which is practically pathognomonic of syphilis. There is a decrease of the hydrocarbon-protein band, and the reactions are unaltered, except that the precipitation of colloidal gold is slightly increased. If a fluid from a case of degenerative encephalitis be so treated a big ring is obtained with ammonium sulphate. The fluid reduces hæmoglobin in the complement-fixation test, and the precipitation of colloidal gold is diminished and the hydrocarbon-protein band is reduced to that of a normal fluid. Treating a normal fluid with formaldehyde (4 drops of latter to 2 c.cm. of former) slightly increases the width of the hydrocarbon-protein band, but with fluids from cases of degenerative myelitis and degenerative meningo-encephalitis the band is increased to that normally obtained with a fluid from a case of G.P.I. If fluids first treated with formaldehyde and then shaken with a hydrocarbon be pipetted off, and the other tests be applied thereto the results turn out as follows: A normal fluid will give a ring with ammonium sulphate; it will prove anti complementary

in the complement-fixation test, but it will cause no precipitation of colloidal gold. A fluid from a case of degeneration will give an enormous ring with ammonium sulphate; it will prove anticomplementary, and its power to precipitate colloidal gold will be decreased. It should be stated here that distilled water and not saline was used in the gold-sol tests, and that the tests must be undertaken the same day as the fluid is diluted, which should be the day after it has been withdrawn. Most discordant results will be obtained if attention to these details be omitted. Arsenic sulphide, antimony sulphide, tin oxide, uranium oxide, selenium and tellurium in the colloidal state all behave as colloidal gold in view of their negative electric charge, while cerium oxide which is positively charged is precipitated by the fluids treated with ammonia. Serum behaves in much the same way with certain variations, which it will be necessary to describe in a separate article, but there are a few points connected with the work done which should be mentioned here. If an electric current is passed through serum most of the protein will precipitate at the positive pole. This negatively charged protein will at first give a positive complement-fixation test and later a negative. The protein at the negative pole very early gives a positive Wassermann reaction, but very quickly acts anticomplementarily, and later reduces hæmoglobin. This positively charged protein behaves in exactly the same way as serum or cerebro-spinal fluid which has been treated with acetic acid. Furthermore, normal serum so treated coagulates at 57° C.; the lipoid-globulin is increased and is precipitated by half saturation with ammonium sulphate, and the ultramicroscopic picture is indistinguishable from that given by a syphilitic serum. Occasionally a syphilitic serum will be found partly to coagulate during inactivation. Proportionately, all these changes are more marked with normal serum and fluid than with pathological. This explains why a normal fluid or serum left standing may give positive reactions long before any change is to be noted in the strength of the reactions given by a syphilitic serum, and why syphilitic fluids and sera resist the growth of bacteria therein longer than do normal.

Some Conclusions Drawn.

A study of the diagrammatic clock (Fig. 2) will help to make clear what would be difficult to put in a few lines, but it might be emphasised in writing that these experiments appear to show: (1) that the different kinds of proteins are mainly alterations of a physical state; (2) that the more acidic the protein becomes the less electrolytically charged it becomes, and the more susceptible it becomes to precipitation with the sulphate anion of ammonium sulphate; (3) that the Wassermann reaction is an exhibition of the upset of the normal hydrogen-ion concentration (complement) in vitro, which occurs when the protein particles are robbed of some of their surface electrolytes and negative ions are allowed to predominate over positive ions or vice versa; (4) that the gold-sol test only occurs when there are lipoid-globulin particles present which are suitably charged with hydrogen ions.

The last paragraph requires further explanation. A gold-sol curve obtained with a cerebro-spinal fluid diluted with 0·4 per cent. NaCl from a case of degenerative encephalitis will read 555543210 where 5 represents complete precipitation of colloidal gold with a fluid diluted 1 in 10, and 0 no precipitation with a dilution of 1 in 2560. If distilled water is used instead of 0·4 per cent. saline the reading will be 555300000. Treatment with formaldehyde reduces the reading to 025520000, and shaking with a hydrocarbon to 552200000, acetic acid to 455522110, and ammonia to 000000000. A normal fluid diluted with distilled water, treated with formalin or an alkali, or shaken with a hydrocarbon, causes no precipitation of colloidal gold, but treated with an acid the reading may be 555400000. From the above it follows that the diminution of precipitation of colloidal gold is caused by a loss of electrolytes on the surface of the protein particles. If the curves given by a pathological fluid treated with sodium chloride and distilled water and formalin be compared, and these again with the curve given by a normal fluid treated with acetic acid, it will be noted that in the distilled water and formalin tubes the shades of purple which characterise the sodium chloride are not met with; that in all the tubes where a precipitate is going to form there is at first a fluorescence, and later the precipitate is red to reddish-purple and the fluid above quite white. This is characteristic of complete adsorption and then precipitation. In the tubes containing the acid normal fluid the fluorescence is not marked, the precipitate is purple, and the fluid above the precipitate is not a clear white. This is characteristic of slight adsorption and then precipitation. If various concentrated salts of ammonia are allowed to take the place of cerebro-spinal fluid, the same dilutions being used, the precipitation of colloidal gold will be immediate and various shades of grey, blue, and purple, with usually no fluorescence, will be witnessed. The order of precipitation occurred as follows: Acetate > sulphate > sulphocyanide > nitrate > chloride > citrate > bromide > phosphate > tartrate > iodide. If acetic acid diluted 1 in 10 alone be used the reading is 55555433210 and the precipitation is immediate.[1] This is characteristic of precipitation without adsorption. From further experimentation it became clear that the grey, blue, and purple tints were caused first by a reversal of the charge on the gold particles (a positive instead of a negative) by the kation ammonium and the kation hydrogen in the case of the acetic acid, and then precipitation by the various anions according to the Hofmeister's series. From this it follows that the gold-sol test for degeneration depends upon the positive charge on the lipoid-protein particles adsorbing and then precipitating; that the purple tints noted when sodium chloride is used are due to reversal of charge by the kation sodium and precipitation by the anion chlorine; that the curve given by a normal fluid treated with acetic acid comes midway between the reversal of charge and precipitation by a neutral salt and adsorption; and precipitation by the hydrogen-ion on the surface of the lipoid-protein particles. Therefore, although these reactions are electrolytic it is clear that they are influenced by the substratum (protein) to which the electrolytes are attached and that it is the internal phase or the protein colloidal particles and not the external phase of the serum which is the most important—a fact which is well illustrated in my recent work on shock.[2] This statement is also proved by these experiments. If one drop of glacial acetic acid is added to 1 c.cm. of a fluid from a case of degenerative encephalitis the reading is 4555221100 when 0·2 c.cm. of the mixture is diluted with 1·8 c.cm. of distilled water. If 0·2 c.cm. of the fluid be diluted with 1·8 c.cm. of a 1 in 10 dilution of glacial acetic acid the reading is 0000155532 and with a dilution of acid 1 in 100 the reading is 0015552210. The readings of acetic acid 1 in 10 and 1 in 100 are 5555543321 and 5554321100 respectively. Non-electrolytic lipoid-globulin fails to precipitate colloidal gold and so does an unprotected suspension colloid having an opposite electric charge, such as aluminium hydroxide. Therefore not only may we say that the precipitation of colloidal gold is dependent upon the protein particles, but that the action is started by the electrolytes attached thereto.

Production in Vitro of Characteristics of Syphilis.

From this study it seems reasonable to infer that the increase in the number of the protein particles, the increase in size and the clumping together, features so pathognomonic of syphilis, are due to factors at work in vivo which we have been able to partly produce in vitro by robbing the protein particles of some of their electrolytes and increasing the hydrogen charge on their surface. As complement, which is the normal hydrogen-ion concentration, is negatively charged owing to the prevalence of hydroxyl over hydrogen electrolytes, fixation thereof is only to be expected by protein particles in a serum from a syphilitic bearing an increased positive charge. The reason why a negative Wassermann reaction is obtained where a positive was to be expected is, as I showed in my work on the

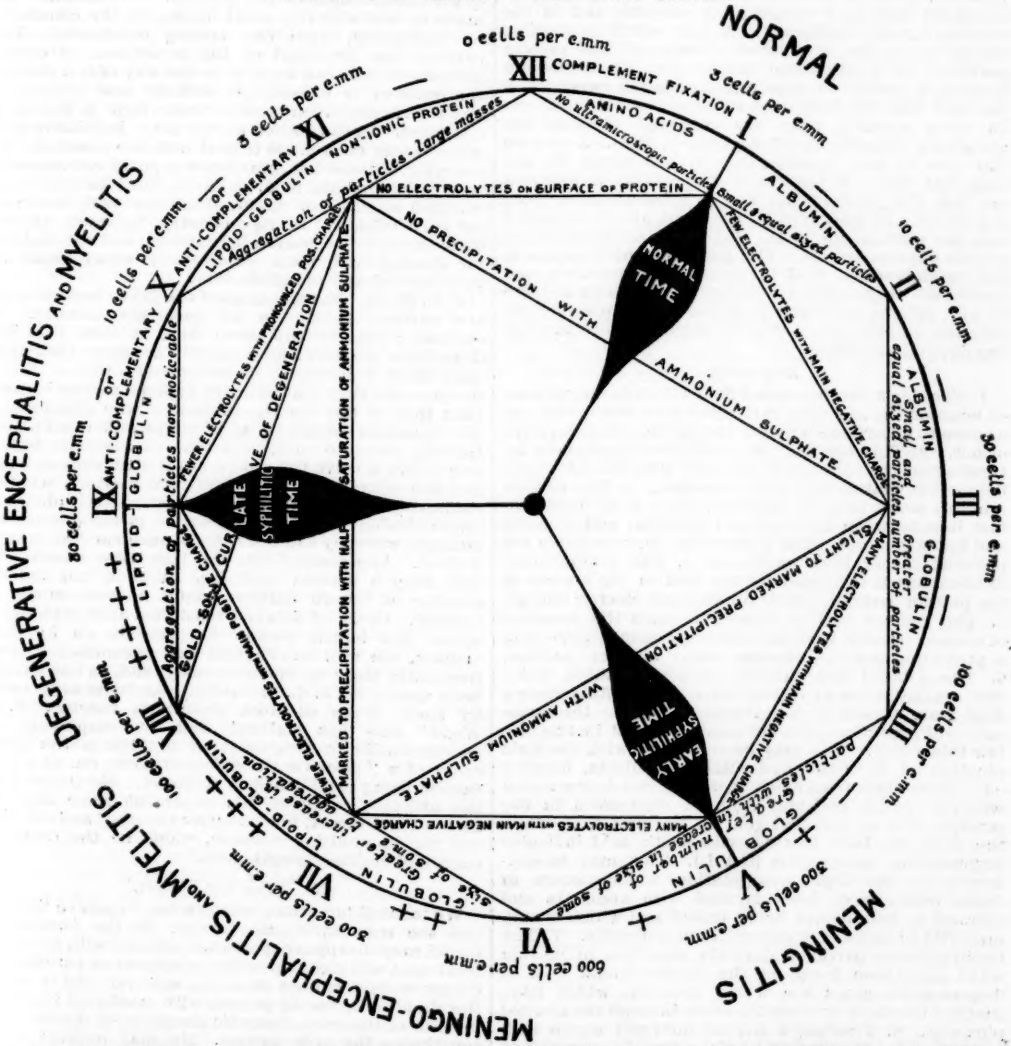
[1] The solution must be freshly prepared, as the precipitating power decreases as this and other such solutions when diluted (formaldehyde, &c.) are kept. [2] Practitioner, 1920, cv., 110.

modus operandi of the Wassermann reaction,[8] due to several factors: (1) to the protein particles being so richly charged with electrolytes as not to be hurt by the partial de-ionisation caused by inactivation (early syphilis); (2) to the protein particles having insufficient charge (lipoid-globulin, late syphilis); (3) to the splitting off of an unsaturated carboxyl-group which prevents the exhibition of the surface tension reaction (lipoid-globulin, late syphilis). As the protein particles in a syphilitic serum are more fully charged with hydroxyl ions than with hydrogen ions when the disease is young and vice versa when the disease is of long standing; as metals which are positively charged are better able to cause dispersion of the particles which are negatively charged, thereby increasing the area covered by the charge; as non-metals which are negatively charged are better able to cause dispersion of the particles which are positively charged, proved by ultramicroscopic examinations—additional proof is brought forward as to why arseno-benzene and mercury are indicated more than intramine and colloidal iodine in early syphilis and vice versa in late syphilis.

If dispersion of the protein particles is carried too far the particles become so minute as to cease to be colloidal. Should this happen before the parasites are vanquished, because it is through the action of these particles that the parasites are killed, it can be readily understood that parasites may be present when tests are negative and vice versa, and that in the case of the former a stimulus may be given to the

[8] Quart. Journ. of Medicine, 1915, viii., 129.

FIG. 2.—THE CEREBRO-SPINAL FLUID CLOCK.



One o'clock is normal time. Five o'clock is early syphilitic time (meningitis). Nine o'clock is late syphilitic time (degenerative encephalitis and myelitis). Over each hour the number of cells to be found is stated. Between the hours the result of the complement-fixation test is given outside the clock, and the kind of protein to be met with inside the clock. The hexagon formed by 12, 2, 4, 6, 8, and 10 o'clock denotes the number and size of the protein particles as determined by ultra-microscopic examination. The hexagon formed by 11, 1, 3, 5, 7, and 9 o'clock records the number of electrolytes on the surface of the protein particles and their electric charge. The triangle formed by 11, 3, and 7 o'clock shows the precipitation of protein by ammonium sulphate. The line between 8 and 11 o'clock denotes the gold-sol curve of degeneration. Supposing a certain cerebro-spinal fluid reveals a cell count of 60 cells per c.mm. the hand will point between 3 and 4 o'clock or between 8 and 9 o'clock. If the former the complement-fixation test will be negative and there will be only a slight precipitation with a saturated solution of ammonium sulphate and the gold-sol test will be negative. Diagnosis: early cerebro-spinal meningitis. If the hand points between 8 and 9 o'clock there will be marked precipitation with ammonium sulphate, the complement-fixation test will be markedly positive and the gold-sol test will be positive. Diagnosis: degenerative encephalitis or degenerative myelitis or both

parasites to renew their activity. Staining experiments appear to show that the syphilitic parasite has a prevailing positive (hydrogen) charge on its surface, therefore in late syphilis the protein particles correspond in many ways to the parasite they are attacking. The changes the protein particles in the serum undergo also take place in the protein particles which form the protoplasm of lymphocytes and plasma cells. Where cells are concerned, should these changes be pushed too far, the source of supply of these particles is attacked—namely, the nucleoli. When this is the case the particles become so physically altered as to behave as parasites themselves to the cells surrounding them, a condition of auto-parasitism which I believe malignant disease to be. If correct, then a parallel exists between these experiments undertaken with serum and cerebro-spinal fluid in vitro and the changes which the protein particles undergo in vivo when they are pushed to resist an injury, a poison or a parasite, and in the attempt become malignant. A point worth mentioning in favour of the view that certain of the protein particles in a syphilitic serum are lipoid-globulin bearing a positive charge and simulating parasites is the fact that the body does attempt to get rid of them. In early syphilis they are excreted through the glomerular membrane of the kidney, likewise may be the case in late syphilis, thereby accounting for the fact that many of the cases of syphilitic proteinuria are not due to nephritis but to ultra-filtration from the blood. In late syphilis they may also be excreted into the peritoneum, giving rise to the condition called pseudo-chylous ascites. The particles which appear in the cerebro-spinal fluid in cases of degeneration and which are responsible for the gold-sol reaction are also in my opinion excreted particles which possibly get into the cerebro-spinal fluid by ultra-filtration through the choroid plexuses.

Summary.

1. Shaking a cerebro-spinal fluid with toluene, xylene, or benzene the day after it is withdrawn will enable one at once to determine whether the lesion is degenerative or not. 2. This test may be still further confirmed by treating another portion of the fluid with formaldehyde before it is shaken with a hydrocarbon. 3. The various proteins merge into one another; there is no hard-and-fast line between albumin and globulin, and globulin and lipoid-globulin. The differences between them are physical rather than chemical. 4. The complement-fixation test is regulated by the ions on the surface of the protein particles—their number and electric charge. 5. The gold-sol test is dependent upon the presence of certain protein particles (lipoid-globulin) which have a prevailing positive electric charge on their surface. 6. The gold-sol test carried out with distilled water will readily serve to distinguish a normal fluid from a fluid from a case of degeneration, because the latter only will precipitate the colloidal gold and in the first few tubes only. This may be confirmed with the fluid pipetted off from the hydrocarbon emulsion, because only those fluids from cases of widespread degeneration will precipitate colloidal gold. A diminution in the precipitation of colloidal gold in the first tube when the fluid has been treated with acetic acid indicates degenerative encephalitis (G.P.I.). This may be confirmed by the slight precipitation which occurs in fluids which have been treated with ammonia and allowed to rest before being tested and which is only met with in cases of degenerative encephalitis. 7. The lipoid-globulin particles simulate parasites in certain ways and those found in the cerebro-spinal fluid in degenerative cases are waste products which have reached the fluid by ultra-filtration through the choroid plexuses. 8. Treating a normal fluid and serum with an acid makes the protein particles therein approach as near as possible to those normally met with in syphilis.

In my opinion these further experiments go some way to support the views I have been expressing for some years on the rationale of immunity and chemotherapy. Finally, I wish to express my deepest gratitude for the valuable assistance given to me by my co-workers, Dr. R. L. Mackenzie Wallis, Mr. J. Patterson, and Mr. J. Ward.

TREATMENT OF DIPHTHERIA CARRIERS WITH DETOXICATED KLEBS-LÖFFLER VACCINE.

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THE problem of the human carrier of bacterial infection is one of ever-increasing importance and one which must be grappled with very seriously in the near future. The term "carrier" denotes a person who harbours virulent pathogenic organisms and is capable of infecting others, though not himself exhibiting any of the clinical signs of the disease. No effort has been made to deal with this great danger to the community by legislation, with one trifling exception.[1] Until carriers can be cured or the occurrence of carriers prevented, little can be done in the way of law-making; the problem is exceedingly difficult and complicated and the carrier much more common than is frequently imagined. In the United States some legislative effort has recently been made to deal with the question. For example, Illinois has prohibited typhoid convalescents from handling milk, food, and so on, until the excreta are certified bacilli-free. A substantial fine ($200) is imposed for each offence. In this country, however, there is little incentive to search for carriers, and our facilities for dealing with them successfully when found are very limited and unsatisfactory.

C. E. Simon[2] has emphasised the grave importance of the carrier problem in no uncertain manner. He estimates that in 1915 there were in New York 2679 diphtheria carriers; he hopefully assumes that there must have been roughly 25,000 typhoid carriers. It may be conceded that control of the typhoid carrier is easier than that of the diphtheria carrier who disseminates his organisms constantly at all times and in all places. Lacking absolute curative measures, adequate legislation would involve the rigid control of all convalescents and the quarantine of all detected carriers, whether convalescent, contact, or non-contact. This is obviously impracticable; the only alternative is some workable measure whereby the activities of such carriers may be limited. As a general rule the latter are searched for only after a serious epidemic. Were it not so, the number of known carriers would be very much increased. Cases of delayed resolution after diphtheria, where the bacilli persist for periods up to three months, are well known and not uncommon. These frequently clear up spontaneously, and, as has already been shown by J. L. Brownlie,[3] can be readily cured by small doses of stock diphtheria vaccine. F. M. Wood[4] also has claimed that by employing his vaccine-antitoxin treatment of diphtheria the possibility of a "positive throat" and, later on, of a true carrier being established is removed. He thinks that the ultimate result of this treatment when used for cases of diphtheria, for "positive throats" and carriers, and for immunising contacts, would be the complete control of diphtheria epidemics.

The "Positive Throat."

We must differentiate between the "positive throat" and the true diphtheria carrier. In the former the bacilli may disappear spontaneously and with energetic treatment will clear up within a reasonable period. The throat which will not clear up, however, and in which the diphtheria bacilli persist with unabated virulence in spite of the most energetic measures of disinfection, constitutes the true carrier. He may harbour these virulent bacilli for indefinite periods and the organisms do not lose their virulence with the lapse of time. He may, however, develop a clinical diphtheria at any time. (Only the virulent bacilli will kill a guinea-pig.) While one must admit that the results of the long and varied list of disinfectant measures and other so-called curative agents have been exceedingly futile, a very considerable percentage of early "positive throats"

were successfully cleared up in the long run. This type of throat proved to be readily curable by one or two doses of stock diphtheria vaccine. Many of the early "positive throats," which doubtless would have baffled disinfectant measures, also responded to this treatment when tackled early. The treatment of the "chronic throat" by stock vaccines proved infinitely superior to the unreliable local antiseptic throat applications. Up to the present time, however, we are aware of no previous effort which has successfully cured the true, well-established diphtheria carrier.

Immunity.

Immunity results from the activities or products of the living tissue cells. Its nature is complex, as also are the factors which influence it. Leonard Hill[5] has shown that natural immunity is greatly influenced by metabolism—depression of the basal metabolism lowers resistance, and vice versa. Further, the toxicity of a bacterium depends on the balance between the toxin and its specific antibody. By altering their relationship, the toxicity of a bacterium may be proportionately enhanced or diminished.[6] The relation of an individual to any pathogenic organism may be one of hypersensibility, susceptibility, or immunity. On complete recovery from an infection there is an enhanced immunity towards the specific organism for a time. This rise of resisting power can be secured by injections of vaccines, by injections of foreign proteins, or by other artificial means which secure a rise of temperature. We have, therefore, a specific and a non-specific immunity. The latter may be, in certain cases, more effective than the former on account of the fact that many of the specific vaccines so far at our disposal have been rendered ineffective by the presence of a high toxin content. Since, as a rule, endo-toxin does not appear to produce, or in any way aid the production of, specific antibodies, its presence in any vaccine is a definite handicap in that it limits our dosage and in most cases ties us down to a dose-maximum which is inefficient. The dosage of any vaccine is most important. It should always be the largest possible, consistent with the absence of any general shock reaction. With a toxic vaccine the largest possible dose is usually very small and inadequate, and the amount of antibody formation is proportionately minute. In the case of a foreign protein which, though a non-specific entity, successfully produces a specific antibody, the general upset is nil, but the rise in temperature is very marked; such a foreign protein might be a colloidal proteose. This would secure an adequate specific antibody production without the general upset of "protein shock." This it accomplishes by the aid of, or through the resulting production of, a very definite rise of temperature.[7] It would be interesting to know what influence the process of immunisation has upon the basal metabolism.

That a carrier possesses a certain amount of immunity seems reasonable. It is clear, however, that a rise of his immunity curve to a considerable degree is necessary before his antibody armament can deal successfully with the organisms which he harbours. His immunity would seem to be usually sufficient to inhibit the organisms, but quite insufficient to exterminate them; in other words, there is a balance of power. The clinical effect of a detoxicated Klebs-Löffler vaccine in increasing the immunity is well demonstrated in the following cases. (We were a little surprised to find that in these a mixed vaccine was unnecessary.) It has been suggested that detoxicated vaccines prepared after the manner of D. Thomson[8] have the power of producing an artificial rise of the immunity curve without a corresponding improvement in the clinical picture.[9] This has never been our experience; the effect of the detoxicated vaccine in causing the degeneration and disappearance of bacilli in carriers of several years' standing is illustrated in the cases we quote. Such a degeneracy in morphological appearance of the cultured organism, followed by its complete disappearance, was noted in the "positive throat" cases treated by stock diphtheria vaccine by Brownlie.[3]

A. Zingher[10] has shown that so far any effort in isolating and treating diphtheria carriers has accomplished little or nothing in securing the cure of the carriers or the diminution of the incidence of diphtheria. He maintains that every infant below 12 years of age should be actively specifically immunised with toxin-antitoxin. It would seem that prophylactic injections of a detoxicated Klebs-Löffler vaccine in doses of 200 to 8000 million in the case of infants and 8000 to 200,000 million in the case of adults would give a considerable degree of immunity. Such doses may be given without risk of any general or local reaction whatever.

Cases.

Towards the end of 1919 Case 2 was treated at our suggestion on the lines of non-specific immunisation. The general reaction was severe and the dosage difficult to regulate. Virulent bacilli persisted, however, and for several reasons the effort was abandoned. Specific immunisation, when possible, would seem to be much the more powerful, especially when such a non-toxic agent is available, but doubtless there is a large field of usefulness for the non-specific treatment. At the moment other long-established carriers, both of typhoid and diphtheria, are under treatment on the lines of specific immunisation indicated; their progress is decidedly promising. The three cases detailed below show the results attainable.

CASE 1.—X., a married woman, aged 52, had a severe attack of diphtheria in September, 1918, followed by pharyngeal paralysis. She was discharged from hospital after two negative swabs, her stay having lasted four weeks. We were unable to discover whether these swabs were taken from throat and nose, or throat only. In March, 1919, she had a nasal polypus removed. In January, 1920, three children whom she looked after took diphtheria, and a swab showed that she still harboured bacilli. Local treatment failed to affect the bacilli in any way, and on April 9th, 1920, 18 months after her attack of diphtheria, her throat swab showed abundant organisms present. On this date treatment with detoxicated Klebs-Löffler vaccine was commenced. Table I. is an account of the treatment received and progress made:—

TABLE I.

Date in 1920.	Dose of K.L. vaccine (millions)	Method of administration.	Maximum pulse.	Maximum temp.	Pathologist's report.
9/4	200	Subcut.	62	96·8	Positive.
13/4	300	,,	68	97·8	,,
17/4	600	,,	70	96·8	,,
21/4	1200	,,	70	97·0	Involution forms.
25/4	2400	,,	80	97·0	Negative.
29/4	3600*	,,	68	97·6	Involution forms.
3/5	200	Intraven.	68	97·4	Negative.
7/5	400	,,	70	96·4	Non-lethal to guinea-pig.
11/5	800	,,	70	96·6	Negative.
14/5	1600	,,	80	97·0	,,
19/5	3200	,,	78	97·0	,,

* Vaccine supply running short.

All subsequent swabs have been negative. During the above vaccine course she had no other treatment whatever. She improved in general health in the most remarkable manner, and the psychological effect of being informed that she was on the road to cure was equally marked.

CASE 2.—Y., a girl, aged 12, was discovered to be a carrier during an outbreak of diphtheria in March, 1917. She was held responsible for three consecutive outbreaks, during which three deaths occurred. From that time onwards she was kept under close observation, and regular throat and nose swabs were taken. These in every case proved positive. During the years 1918 and 1919 she was four times in hospital for considerable periods, but all efforts to destroy the organisms were unavailing. From May to July, 1918, she underwent a course of "606" treatment. She has a characteristic saddle nose, quite devoid of septum, and showing an exceedingly unhealthy naso-pharynx. An effort was, therefore, made to improve this condition before proceeding further with the endeavour to eradicate the diphtheria bacilli. The latter, however, persisted. In the latter part of 1919 non-specific immunisation was tried unsuccessfully. On April 29th, 1920, she came under our care, and a swab taken at that time proved positive. The organism which she had harboured over a period of at least three years proved lethal to a guinea-pig on May 7th, 1920. After a course of vaccine treatment she was entirely free from bacilli, and was returned to her home. She received no other treatment, either general or local, during her vaccine course (Table II.).

Two months later a Klebs-Löffler bacillus was again demonstrated in her nose. It proved, however, non-lethal to a guinea-pig. During these months this patient had

constantly nursed a baby sister, and also an infant of a next-door neighbour. She had, moreover, slept all the time in a bed with two younger twin sisters. At the date of this positive swab a similar organism was demonstrated in the noses of both these sisters. In no case have any symptoms supervened. This clinical evidence supports the pathological finding that the organisms present are not those which give rise to the disease diphtheria, although similar in

TABLE II.

Date in 1920.	Dose of K.L. vaccine (millions).	Method of administration.	Maximum pulse.	Maximum temp.	Pathologist's report.
29/4	100	Subcut.	62	97·0	Positive.
3/5	200	,,	72	97·0	,,
7/5	400	,,	72	96·8	Lethal to guinea-pig.
11/5	800	,,	80	96·8	Positive.
14/5	1,600	,,	76	97·0	,,
19/5	3,200	,,	72	97·0	,,
4/6	6,400	,,	84	96·8	,,
8/6	8,000*	,,	74	97·0	Negative.
12/6	8,000*	,,	86	97·0	,,
16/6	16,000	,,	70	96·6	,,
21/6	32,000	,,	74	96·8	,,

* Vaccine supply running short.

morphology. That is, the organisms may be an essentially different type, or they may be the original strain denuded of all virulence by the treatment. The former theory seems the more likely, but even if the latter be correct, the practical point that emerges is that not a trace of virulence returned to the organism on passage through the throats of the twin sisters of the case. However, the course was given, as shown in Table III.:—

TABLE III.

Date in 1920.	Dose of K.L. vaccine (millions).	Pathologist's report.
15/9	—	Positive, but non-lethal to guinea-pig.
16/9	40,000	Positive.
20/9	80,000	Positive, but non-lethal to guinea-pig.
24/9	160,000	Negative.
29/9	250,000	,,

She was sent home on 6/10/20. Meanwhile the positive throats of the contact children already mentioned had cleared up without any treatment and without developing symptoms of any sort.

CASE 3.—Z., a soldier, 26 years of age, was wounded very severely in the face in Belgium on August 2nd, 1915. The nose was completely blown off by a sniper's ricochet bullet. The wounds were cleaned at the base, and two further operations were undertaken four weeks later, while nine weeks later still, at Grayson-road Ear and Throat Hospital, two further operations were performed. At this time the patient had erysipelas, from which he recovered. He was then discharged from the army and admitted to Queen's Hospital, Sidcup, where two plastic operations were performed. These included a graft from a rib cartilage in April,

TABLE IV.

Date in 1920.	Dose of K.L. vaccine (millions).	Pathologist's report.
12/7	4,000	Throat and nose positive.
6/7	12,000	,, ,, ,,
20/7	24,000	,, ,, ,,
5/8	48,000	Throat and nose involution forms only.
9/8	96,000	Throat and nose positive.
13/8	120,000	Nose involution forms, throat negative.
17/8	100,000*	Nose positive, throat negative.
21/8	150,000	Nose involution forms, throat negative.
25/8	200,000	Nose positive, throat negative.
30/8	250,000	Nose involution forms, throat negative.
3/9	300,000	Non-lethal to guinea-pig.
7/9	350,000	—

* Supply of vaccine had run out.

1918, which was very successful. He was discharged from hospital and proceeded to his home, where, in August, 1918, three cases of diphtheria occurred. The patient himself had no attack, but Klebs-Löffler bacilli were demonstrated in his nose, and were found to be virulent. Ever since that date these organisms have persisted, and numerous animal inoculations over this period of 23 months showed the organism had lost none of its virulence.

Treatment with detoxicated Klebs-Löffler vaccine was undertaken on July 12th, 1920, and an intensive course proceeded with. Involution forms appeared on August 5th, and on Sept. 3rd the organism proved non-lethal to a guinea-pig. All the doses of vaccine were given subcutaneously, the patient travelling 20 miles by rail to receive the injections, and returning home the same day. On no occasion did he experience the slightest reaction or trace of discomfort, either generally or locally. The vaccine was supplied to us in strengths of 2000, 20,000, and eventually 100,000 millions per c.cm.

Table IV. is an account of the dosage employed, accompanied by the pathologist's reports.

Suggested Course.

In each of the tables above a check in the increase of dosage will be noticed. The reason for this was that the initial stock of vaccine had run out before the arrival of new supplies. The following course might be suggested as suitable for the treatment of chronic diphtheria carriers. (Table V.)

TABLE V.

Day.	Dose in millions (subcutaneously).	Dose in c.c.	Pathologist's report.
1	5,000	0·05	On swab and effect on guinea-pig.
5	10,000	0·1	—
9	20,000	0·2	—
13	50,000	0·5	On swab.
17	100,000	1·0	—
21	120,000	1·2	On swab.
25	150,000	1·5	—
29	200,000	2·0	On guinea-pig inoculation.
33	250,000	2·5	—
37	300,000	3·0	On swab.
41	320,000	3·2	—
45	350,000	3·5	On guinea-pig inoculation.

Continue the swabbing monthly; should bacilli reappear continue thus :—

1	50,000	0·5	On guinea-pig inoculation.
5	100,000	1·0	—
9	200,000	2·0	—
13	300,000	3·0	On swab.

By such repeated short courses (when they are required) at, say, three-monthly, and, later, six-monthly intervals, the patient's immunity will be maintained at its maximum.

Concluding Observations.

The length of time during which these cases were carriers of virulent bacilli is important. Since vaccines when given in sufficient doses can have such a marked effect on the virulence of the organism or on the organism itself in such difficult cases they will certainly cure convalescents where resolution is delayed. This has been pointed out by Brownlie.[3] It is generally conceded that the convalescent with an otherwise unhealthy naso-pharynx is most prone to become a chronic carrier. Here we have a point in common in all three cases quoted; in the first a nasal polypus, in the second congenital syphilis, and in the third a gun-shot wound. The first had an attack of diphtheria, while the other two had not. In spite of these ideal conditions for bacterial growth disappearance of the virulent diphtheria bacilli followed detoxicated vaccine treatment. Other organisms with the same morphology, but non-pathogenic, can still flourish on the site, as a mixed vaccine was not used.

Exactly what determines the chronicity of carriers is not yet by any means clear. We are still unaware of the mechanism whereby the convalescent with delayed resolution becomes free. In spite of a multitude of varied efforts, no certain means of clearing up chronic carriers has yet been evolved. The cure of carriers is the most hopeful form of prophylaxis. One would expect the vaccine to confer more or less protection on those exposed to infection. Here we have, then, a method of promising efficiency in dealing with contacts, convalescents, and carriers. Antitoxin protects only from the toxin produced by the living Klebs-Löffler bacilli in the tissues. The vaccine prevents the growth and life of the bacilli. In a case of diphtheria both vaccine and antitoxin should be given. The advantages of dosage allowed by employing detoxicated vaccine must not be overlooked. The dosage employed in Case 3, with good effect and no trace of general or local reaction, is particularly striking.

It is with pleasure that we express our thanks to Dr. J. P. Watt, medical officer of health, Aberdeenshire, for placing these carriers at our disposal, and for a detailed history of Case 2; to Dr. Harry J. Rae for facilities for dealing with Case 3; and to Messrs. Genatosan, Ltd., 12, Chenies-street, W.C., for keeping us supplied with vaccine in constantly varying strengths at a time when dosage was an unknown quantity.

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FURTHER EXPERIMENTS FOR PRESERVATION OF LEMON-JUICE.

BY P. W. BASSETT-SMITH, C.B., C.M.G., F.R.C.P.,
REAR ADMIRAL, ROYAL NAVY.

THE preparation of a concentrated form of lemon-juice conserving its antiscorbutic properties has been described in a previous report (April, 1920).[1] The juice of fresh lemons is evaporated down in vacuo at room temperature to a specific gravity of 1·3; it is then a dark yellow, viscid, and very acid fluid, easily made into solid tablets with lactose, &c., and keeping well either in the concentrated juice or tablet form. (In the laboratory preparation of the tablets a small proportion of gum tragacanth was added to give firmness to the final product. In a manufacturing process the great compression available will enable the addition of gum to be dispensed with, and it is essential that it should be as its presence very seriously diminishes the solubility of the tablets.)

The following additional experiments have been carried out.

Keeping Properties of the Concentrated Juice.

(*a*) A basin of the evaporated juice was exposed for half an hour to the air, then covered and kept in the dark at room temperature. After one, two, and three months this showed neither growth of moulds nor evidence of fermentation. (*b*) Test-tubes of the juice were heavily inoculated with aspergillus, penicillium, and mucor; no growth has taken place. It is therefore evident that the concentrated juice may be kept indefinitely without becoming mouldy or fermenting. This is probably due to the intense acidity and viscosity; on dilution of the juice with water it rapidly becomes contaminated with bacterial growth. Commercial malt extract behaves in much the same way.

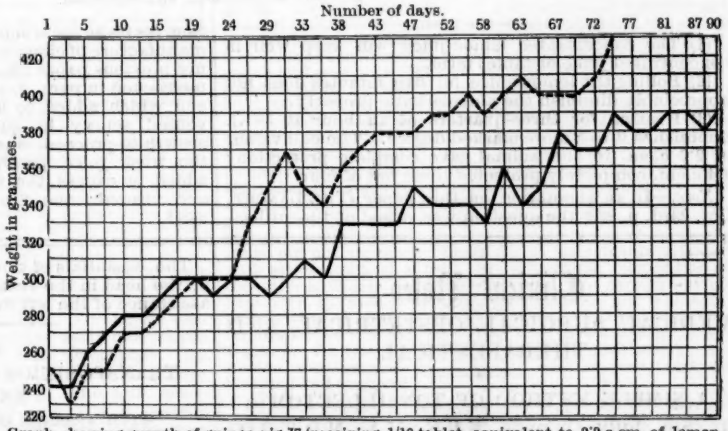
Animal Experiments.

These were carried out to determine whether short periods of exposure to a high temperature, or longer periods at a lower one, could be used without destruction of the antiscorbutic properties for (1) preservation of the original lemon-juice before transit to England; (2) assistance in concentration of the juice in England for preparation of tablets or storage in this concentrated form. Young guinea-pigs of about 300 g. were used. The basal diet was ship's biscuit 40 g., milk sterilised for one and a half hours, 60 c.cm. liq. calcis, and a feed of bran and oats one day per week for anti-beri-beri vitamines. The cages were large, and the room was warm though well ventilated.

First series.—Fresh filtered lemon-juice boiled for five minutes before concentration. Four animals were given daily 1/5 tablet equal to 4·4 c.cm. of fresh lemon-juice. One died on twenty-ninth day, all the others grew normally. Two animals were given 1/10 tablet, equal to 2·2 c.cm. of fresh lemon-juice; both did quite well. One animal was given 10 c.cm. of boiled de-acidified lemon-juice daily; this also grew quite well. Thus 6 out of 7 treated with lemon-juice which had been boiled for five minutes were completely protected over a period of 90 days.

Second series.—Fresh filtered lemon-juice heated to 58° C. for 45 minutes before concentration. Four animals were given daily 1/5 tablet, equal to 4·4 c.cm. of fresh lemon-juice; one of these began to lose weight on the fifty-third day and died apparently from inanition on the sixty-ninth day, no signs of definite scurvy being present. Two were given 1/10th tablet, equal to 2·2 c.cm. of fresh juice. In one progressive loss of weight began on the sixtieth day, on the sixty-fifth day marked paralysis of the hind legs developed, with painful joints; on the seventieth day the subject was put on normal diet and recovered slowly, though the knees remained stiff from contraction, probably fibrosed clots. Thus two of the six animals showed signs of deficiency disease, but in neither were scurvy signs marked. It would appear that though protection was given it was not so complete as in the animals treated with the unheated juice or with the juice boiled for five minutes only, and it follows that boiling for a short period which would sterilise the lemon-juice does not destroy the antiscorbutic factor.

Controls.—Two animals were fed on basal diet only. These began to lose weight on about the twenty-fifth day and both died, one on the thirty-ninth and one on the forty-first day. General scurvy signs and enlarged suprarenals were found post mortem. Two animals were given 1 c.cm. of fresh whole blood daily with the basal diet. One showed signs on the twenty-fifth day and became steadily worse, with faceache position, diarrhœa, ophthalmia, and great emaciation; on the twenty-seventh day it was given cabbage ration and made a complete recovery. The second showed signs on the twenty-fifth day and died on the thirty-eighth. Post mortem there were marked gastro-intestinal changes, with enlarged wrist-joints and suprarenal bodies. The addition of fresh blood to the diet appeared to give rise to intestinal fermentation and did not prevent the onset of signs of deficiency disease in guinea-pigs.



Graph showing growth of guinea-pig 37 (receiving 1/10 tablet, equivalent to 2·2 c.cm. of lemon-juice, boiled for 5 min.), and of guinea-pig 47 (receiving 1/10 tablet of lemon-juice, heated at 58° C. for 45 min.). ——— No. 47. - - - - - - No. 37.

[1] See THE LANCET, May 22nd, 1920 (p. 1102).

TABLE OF RESULTS OF EXPERIMENTS ON GUINEA-PIGS TO DETERMINE THE ANTISCORBUTIC PROPERTIES OF LEMON-JUICE EXPOSED TO VARYING DEGREES OF HEAT.

No.	Weight in grammes	Diet.	Course.	Result.	Gain or loss of weight.	Scurvy signs.	Duration (days).
32	250	Lemon-juice boiled 5 minutes. 1/5 tablet = 4·4 c.cm.	Paralysis of hind legs and 26-day signs.	D. 29th day.	Nil.	Hæmorrhages, subcutaneous and intestinal. Sp. large and hæmorrhagic.	29
33	340	,, ,,	Steady growth.	R.	Gain 100.	Nil.	80
34	270	,, ,,	,, ,,	R.	Gain 160.	Nil.	91
35	300	,, ,,	,, ,,	R.	Gain 120.	Nil.	91
36	340	Lemon-juice boiled 5 min. 1/10 tablet = 2·2 c.cm.	,, ,,	R.	Gain 110.	Nil.	91
37	350	,, ,,	,, ,,	R.	Gain 180.	Nil.	91
41	300	Deacidified lemon-juice boiled 5 min. 10 c.cm.	,, ,,	R.	Gain 130.	Nil.	90
42	340	Lemon-juice heated at 58° C. for 45 min. 1/5 tablet.	,, ,,	R.	Gain 170.	Nil.	93
43	270	,, ,,	,, ,,	R.	Gain 160.	Nil.	93
44	340	,, ,,	Practically no growth for 6 weeks, then rapid fall.	D.	Loss 90.	None definite beyond emaciation.	67
45	240	,, ,,	Steady growth.	R.	Gain 160.	Nil.	93
46	290	1/10 tablet of above.	Steady growth for 9 weeks, then rapid fall; normal diet on 67th day.	Final recovery.	Gain 20.	Stiff joints and paralysis of hindquarters.	93
47	240	,, ,,	Steady rise.	R.	Gain 160.	Nil.	93
40	280	Control; basal diet only.	Began to lose weight 22nd day; rapid fall.	D.	Loss 120.	Blood, bones, and joints.	39
48	260	,, ,,	Began to lose weight 24th day; rapid fall.	D.	Loss 50.	Hæmorrhage; fragile bones; large joints.	41
39	300	Basal diet, plus 1 c.cm. fresh blood.	Steady loss of weight from 20th day.	D.	Loss 80.	,, ,,	39
38	250	,,	Scurvy signs on 27th day; put on cabbage 36th day; rapid recovery.	Final recovery.	Gain 100.	Face-ache; painful joints; diarrhœa; ophthalmia.	64

D., died. R., recovery. Sp., suprarenal.

Conclusions.

(1) The concentrated lemon-juice will keep well in concentrated juice or tablet form.

(2) Boiling the lemon-juice for five minutes does not appreciably diminish the antiscorbutic property.

(3) Heating for three-quarters of an hour at 58° C. diminishes it to a more marked degree. The equivalent of 2·2 c.cm. in one animal gave complete protection; 4·4 c.cm. completely protected three out of four.

Note.—In an annotation on this paper (THE LANCET, Oct. 23rd, p. 863) the question was raised of the utilisation, for its antiscorbutic content, of the magma from the manufacture of citric acid by precipitation with chalk. In my previous paper (May 22nd, 1920) the deacidified juice mentioned in para. 2, p. 1104 (and in first series above), and which added to an otherwise scorbutic diet prevented scurvy in guinea-pigs and enabled normal growth to proceed, was prepared in such a manner. To the fresh juice precipitated calcium carbonate was added in excess, the mixture brought just to the boil and filtered; the filtrate gave the deacidified juice used.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A SIMPLE METHOD OF TONSILLECTOMY.

BY SIR JOHN O'CONOR, K.B.E., M.A., M.D. T.C.D.,
BRITISH HOSPITAL, BUENOS AIRES.

I WOULD like to invite attention to a simple and effective method for removing tonsils and adenoids.

Ether is given by the open method and the patient is placed in a supine position on the operating table, with the head semi-extended over a medium-sized circular sand cushion, held firmly fixed in a vertical position between the hands of an assistant standing behind the head of the table. Another assistant, standing on the right side, introduces a Doyen's mouth-gag and maintains it in situ. The operator, standing on the left side, passes Mackenzie's tonsillotome of suitable size towards back of pharynx, at the same time gliding his left index finger downwards alongside of instrument to guide it into position so that it may encircle the left tonsil—this is combined with a gentle inward push of the handle which fixes the ring against the lateral pharyngeal wall below the projecting tonsil. The guillotine is then pressed home and the tonsil removed. The assistant at once removes the gag, he and the operator change sides, and the same procedure is repeated on the right side, after which the operator passes his right index finger behind the palate in quest of adenoids, which, if present, are at once removed by a curette. The gag is then removed, and the patient's head and shoulders are dropped, momentarily, over side of table to facilitate ejection of blood.

The essentials of this method are rigid maintenance of the head in the vertical position, and the intelligent assistance of the left index finger.

A CASE OF TRANSPOSITION OF CÆCUM, APPENDIX, AND COLON, WITH ABSENCE OF THE SIGMOID FLEXURE.

BY VINCENT J. GLOVER, M.D. LIVERP., M.B., CH.B. VICT.

THE operation which is here described was recently performed upon a patient who first consulted me some six months previously.

At that time he suffered from pain which began on the right side, skirting the lower angle of the scapula, and radiating round the flank towards the umbilicus; shortly it became intense and localised midway between the umbilicus and McBurney's spot. Vomiting of green bilious fluid occurred; I found no temperature and no other symptom upon examination of the abdomen beyond marked tenderness on palpation over the region of McBurney's spot and along a line extending from it half-way to the umbilicus. After a few days' rest and appropriate treatment the patient resumed his occupation, taking a light diet. I formed the opinion that he had had an appendicular attack, although I was not quite satisfied, suspecting the presence of gall-stones. A similar attack supervened after three weeks' interval, and upon the occurrence of a third I consulted with Dr. A. Gordon Gullan, who inclined to the view that there was some gall-bladder trouble, and probably some appendicular disease. The patient was dieted and treated, and recovered rapidly, but another attack followed, and I decided to operate.

The abdomen was opened by the rectal-sheath method. There were extensive adhesions of the small intestine. The condition evidenced several attacks of localised peritonitis. During search for the appendix a loop of small intestine presented itself; as the latter was brought through the abdominal incision a circular ulcer perforated, but was rapidly dealt with. Passing the hand into the left iliac fossa one felt the bladder with an enlarged prostate drawn over towards it by adhesions to bowel, and by adhesions of bowel to parietal peritoneum. These were separated, and the bladder resumed its normal position. Searching for the appendix I then found that there was a complete transposition of the large bowel. The ileum ended in the cæcum on the left side of the abdomen, the cæcum being continued up on the left side as the ascending colon, passing into the transverse colon, and thus descending on the right side as the descending colon. At the level of the iliac crest the descending colon passed at an acute angle to the centre of the brim of the true pelvis to descend as the rectum. A remarkable feature was the absence of the sigmoid flexure. I examined the gall-bladder, and cystic, hepatic, and bile-ducts and found no evidence of gall-stones. There was no transposition of any other abdominal organs. The patient at no time had a temperature during his attacks.

Recovery after the operation has been rapid. The facts here stated will be corroborated by Dr. Douglas P. Blair and Dr. J. Dunn, who were present at the operation.

A CASE OF
NERVE SUTURE WITH IMMEDIATE RETURN OF SENSATION.

BY WILLIAM ROBERTSON, M.D. GLASG.

THE reference in THE LANCET of July 24th to denervated muscle recalls a case I had to deal with some time ago, of which the following is a brief clinical account:—

In 1897 a boy, aged 11, fell from his pony, sustaining a compound fracture of the left humerus near the elbow. The boy cried out and a kaffir pulled the injured arm rather roughly. The sharp edge of the fractured humerus could be easily seen in the wound. No attention at the moment was paid to the innervation of the arm owing to the extensive wound in front of the joint and the setting of the fracture. The limb was put up in rectangular splints. The wound healed rapidly and early movement could be practised. It was soon noticed that atrophy of the forearm and hand was too extreme to have been caused by the mere splinting of the limb, and sensation was bad in the fingers. One night the forefinger came accidentally in the candle and was burned without the patient being aware of it. After the wound was healed the bone united and the joint was mobile. An incision was made over the median nerve some distance above the site of the fracture. Abundant cicatricial tissue was met with enveloping the nerve. After freeing the nerve from this the sheath was found to be intact, but on running the finger along a gap was observed indicating the complete severance of the nerve within its sheath, the gap measuring perhaps 2 or 3 mm. The sheath was cut through the gap, and when the two cut ends of the nerve were examined each surface was found covered with small oval bodies, the repair material of a severed nerve. No formed tissue existed between the ends of the nerve. The repair material was shredded off down to normal nerve fibre, and the two ends of the nerve were sutured through with fine silk, in opposing the ends the proper alignment of the nerve was observed. The nerve sheath was carefully stitched up. When the boy came out of chloroform, or shortly afterwards, with an exclamation of surprise he told me he could feel his fingers. He could also discern articles placed between fingers and thumb.

The wound healed by first intention. The splint was continued and for a few weeks gentle daily movement of the elbow-joint was all that was attempted. To the integrity of the nerve sheath is to be attributed the early functioning of the nerve cells. The arm since the operation has given no trouble and is now perfect in function and strength. No doubt the nerve was severed inside its sheath by the rough pulling on the arm at the time of the accident.

Mossel Bay, South Africa.

LITERARY INTELLIGENCE.—Messrs. W. Heinemann (Medical Books), Ltd., will shortly publish a new work on "Gout, Its Etiology, Pathology, Course and Treatment," by Dr. Ll. Jones Llewellyn, to contain a section on Ocular Disease by Dr. W. M. Beaumont.

COMPLAINTS AGAINST AN INSURANCE MEDICAL OFFICER.—Complaints were recently made by two patients against a panel doctor in Devonshire, and the report of the committee of inquiry, which was held at Okehampton, was forwarded to the Ministry of Health. Dr. Addison has replied that he is not satisfied that the continuance of the medical officer referred to would be prejudicial to the efficiency of the medical service of the insured, and consequently will take no further action in the matter. One of the complainants was ordered to pay 2 guineas towards the costs of the medical practitioner, but as the other complainant was deceased no order would be made.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF OBSTETRICS AND GYNÆCOLOGY.

A MEETING of this section of the Royal Society of Medicine was held on Nov. 4th, Professor HENRY BRIGGS, the President, being in the chair.

Dr. J. D. BARRIS and Dr. M. DONALDSON presented a short communication on

Acute Inversion of the Uterus: Treatment by Blood Transfusion and Late Replacement.

Dr. Barris said that the patient, a housewife, aged 34, had been admitted to hospital on August 12th on account of collapse and hæmorrhage following labour.

She had been married for six years and twice pregnant; the first pregnancy had ended in miscarriage at the third month, September, 1914, and the second in labour at term, October, 1916, when she was delivered of a 10 lb. child without difficulty. The present labour, which was conducted by a midwife, began at 3 A.M. and a child weighing 7 lb. was born at 6.5 A.M. on August 12th, the perineum being torn incompletely. The placenta did not come away spontaneously, and after two hours the midwife delivered it by expression, at the same time pulling on the cord. Profuse hæmorrhage followed and the patient "felt something come down." On her admission to hospital at 5 P.M. she appeared blanched and collapsed. Temp. 98° F., pulse 120. A swelling, identified as the uterus, was found rising to 4½ in. above the pubes, and in the position of the fundus a distinct cup-shaped depression could be felt. The vagina contained much fresh blood and blood clot. The fundus uteri could be felt projecting through the external os and lying just inside the vaginal orifice, and a diagnosis of acute inversion was made. It was decided to treat the patient for collapse and hæmorrhage and to postpone the replacement of the uterus. Pituitrin, 1 c.cm., was injected hypodermically and a hot vaginal douche was given. Two days later the red cells numbered 1,800,000 and blood transfusion was attempted (citrate method), but owing to a fault in the apparatus only 100 c.cm. could be introduced. The patient continued to bleed and on August 27th the red cells numbered only 1,200,000. 600 c.cm. of blood were transfused on Sept. 3rd, and the number of red corpuscles rose to 2,570,000 on Sept. 4th. Local sepsis, evident within three days of admission, was treated by means of Carrel's tubes inserted into the vagina, using a solution containing 1 in 4000 pot. permang. and 1 per cent. sod. sulph. The irrigation was continuous, and so regulated that if the pads were changed every three hours the bed remained dry. On August 18th, during micturition, the fundus became completely inverted and protruded from the vulva. Considerable shock ensued, and the fundus was wrapped in sterile gauze but not replaced. Three hours later it was irrigated with saline and pushed back into the vagina. Reposition of the uterus, which had involuted well, was carried out on Sept. 29th by means of Aveling's repositor, and was complete within 19 hours of its application. The repositor was removed from the uterine cavity after five minutes' gentle traction. On Oct. 4th patient appeared in good health; the fundus was normal in situation and contour, and no bleeding had occurred.

Dr. Barris added that the case presented several points of interest. It was an addition to those recently described by Dr. Herbert Spencer,[1] and it emphasised the value of late reposition of the uterus, as practised by him. The case also illustrated the value of blood transfusion in marked anæmia. The third point of interest was the demonstration that Carrel's tubes could be used for sepsis during the puerperium with no discomfort to the patient.

Discussion on Latent Syphilis during Pregnancy.

Papers on this subject were read by Dr. R. A. HENDRY, Dr. AMAND ROUTH, and Mr. JOHN ADAMS. These are published in full in this issue of THE LANCET.

In the course of the discussion Mr. CHARLES GIBBS said that his 25 years' experience in charge of women and children at the London Lock Hospital had shown him how deplorable was the gross neglect in the treatment of syphilis in pregnant women until the last few years. A poor woman suffering the double burden of pregnancy and the disease could not gain admission

[1] THE LANCET, 1919, ii., 877.

into any hospital except the infirmaries. A few cases were taken in at the Lock Hospital, but most of the women were sent to a neighbouring infirmary for their confinements, returning later for further treatment. During the last few years the Ministry of Health had provided hospital accommodation for some of these women, but the accommodation provided was very small in comparison with the need. Mr. Gibbs urged the supreme importance to the State of affording proper facilities for the treatment of syphilis. It was remarkable how little treatment by modern methods was required to reduce the percentage of dead children born.

Mr. Gibbs's experience in this work was divided into two periods, before and after the discovery of the W.R. and treatment by 606. Dr. Hendry's statistics showed clearly the excellent results of treatment of the mother by mercury. The statistical records of the Lock Hospital at the period when mercury alone was used similarly showed remarkably few deaths in the infant, but the mother had had to receive a prolonged period of mercurial treatment to produce an apparently healthy child. In connexion with the treatment of those infants born without blemish of syphilitic mothers, Mr. Gibbs recalled the practice of a certain surgeon who on finding no signs of syphilis left the children untreated. Since in the vast majority of cases no signs occurred even after prolonged observation it was important to remember that such an infant might not develop signs even if untreated. Mr. Gibbs said that all those adults, children, or infants who showed signs of syphilis or whose W.R. was positive now received a full course or multiple courses of 606 or substitute; but if a patient, adult or infant, showed no signs of syphilis and had a negative W.R., he gave no 606 until one or both of these factors changed. All patients were given a full two or three years' course of mercury, as he was convinced that 606 does not cure syphilis. However, he believed that if the mother, and through her the child, had received 606 or substitute, and both had received two or three years' mercury treatment, the majority of them would be cured. His experience led him to believe that after a sufficient course of mercury for three years further treatment was unnecessary. He considered that massive doses of mercury for prolonged periods are necessary to cure syphilis. In the Lock Hospital infants born without signs and with negative W.R. had in the majority of cases received mercury only. All infants and children showing signs of syphilis had received 606 or substitute by all methods. The intravenous method was preferred, and the drug was extremely easily given to infants by the external jugular vein or the anterior fontanelle; the latter route was also used for obtaining blood for the W.R. It was important to give the mother a full course of 606 after the birth of the child, during breast-feeding.

Mr. Gibbs then gave figures relating to the last 100 syphilitic women and their babies who had been discharged from the Lock Hospital. These figures showed that practically all the children had negative W.R. at birth. This phenomenon obviously could not be explained by any theory that the children were free from syphilis, or that syphilis had been rendered latent by treatment. Mr. Gibbs held that there must be some natural physiological cause for this 97 per cent. negative result. The only theory which seemed to meet these facts was that of Dr. Routh on placental ferments. Mr. Gibbs said that Roux was doing some experimental work on placentæ in this particular connexion, using fluid compressed from the placenta in the cultivation of spirochætes.

Mr. J. E. R. MCDONAGH said that once a woman was syphilitic she required treatment throughout each succeeding pregnancy, even if the father was another man who had never had syphilis. Pregnant women who contracted syphilis behaved like those who are not pregnant, so far as the course run by the disease and blood tests were concerned, although as time went on, if repeated pregnancies occurred, the disease seemed to be rendered milder and the C.S.F. became negative. It was possible that repeated pregnancies might result in the spontaneous cure of the disease, although the symptoms might recur, with a positive W.R., after the child-bearing period. Most interesting were those cases which showed symptoms for the first time at the menopause—cases of conceptional syphilis. The most important question arising out of antenatal treatment was that relating to the infectivity of the child. Treatment of the mother in most instances resulted in the birth of a healthy-looking baby, whose blood was almost invariably negative. Were these children syphilitic, and, if so, would the treatment advised for two to three years prevent the appearance of symptoms in later life? He was under the impression that the children were syphilitic; he always treated them as if they had actually shown signs of the disease, as he had seen many cases in which symptoms of syphilis congenita tarda developed. It was still to be seen whether treatment would prevent these late manifestations. At present Mr. McDonagh was inclined to the view that a large number of cases of late congenital syphilis would be seen from the next 10–30 years onwards.

Mr. KENNETH WALKER said that Dr. Routh's theory of the pathology of latent syphilis in pregnancy was most interesting, but whilst it was possible to accept a great many of his suggestions it was necessary to exhibit some caution. In Mr. Walker's opinion the evidence that the organism of syphilis might exist in some other form than a spirochæte was overwhelming. The absence of spirochætes in semen which was known on clinical and experimental grounds to be infective was almost conclusive. The same remark might apply to the fœtus, and the same fact might explain the failure to find spirochætes in syphilitic miscarriages. After a certain period these spores or granules would develop into the spirochætes which were found so readily in the tissues of the syphilitic stillborn child. Whether the chorionic ferments had any action on the organism of syphilis was an entirely different question. It seemed to Mr. Walker that Dr. Routh, anxious for the safety of the developing child, surrounded by all the horrors of spores and spirochætes, had cast about for a good fairy, and had finally decided that the chorionic ferments must play this rôle; Mr. Walker would have lit rather on the lipoids of the placenta, which must certainly have a strong protecting action. As spirochætes could now be grown in culture it would surely be possible to test the action of chorionic ferments on spirochætes. It was difficult to obtain reliable statistics as to the frequency with which a negative W.R. was obtained in syphilitic pregnant women. Out of 226 women attending a Buenos Ayres maternity clinic and exhibiting clinical signs suspicious of syphilis 116 had given a negative W.R.; it was therefore difficult to feel sure that all of these suspicious cases were actually syphilitic.

Dr. EARDLEY HOLLAND said that the only contribution he proposed to make to the discussion was on syphilis as a cause of fœtal death. He was sure that the frequency of syphilis as a cause of fœtal death had been greatly exaggerated—for example, the Royal Commission on Venereal Diseases had come to the almost ludicrous conclusion that 50 per cent. of stillbirths were due to syphilis. This figure was greatly at variance with the figures obtained by all recent workers. Dr. Holland had personally investigated the cause of fœtal death in a mixed sample of 300 dead-born viable fœtuses, of which 133 were macerated and 167 fresh.

The investigation consisted in a complete histological examination of the fœtal organs and of the placenta, the *S. pallida* being looked for both by the direct and by the Levaditi methods. The health and the W.R. of the mother were also investigated, and, where possible, of the father. Spirochætes were found in 37 of these fœtuses, or 12 per cent. of the whole, 35 of them being macerated and 2 fresh. These were cases of undoubted fœtal syphilis, and might be termed cases of active or florid fœtal syphilis, as opposed to possible latent fœtal syphilis, where spirochætes could be found. An important question arose whether fœtal syphilis could ever be justifiably diagnosed in the absence of spirochætes. Dr. Holland believed that it could. Accepting the presence of spirochætes as the primary attribute of syphilis, he had noted the following special changes in the 37 spirochæte-positive fœtuses, which he called secondary attributes: A. Positive maternal W.R., in all; B. chondro-epiphysitis, in all; C. great enlargement of the spleen, in 29; D. great enlargement of the liver, in 22; E. placental changes peculiar to syphilis, in 24. The remaining 267 spirochæte-free fœtuses were searched for these attributes. The W.R. was positive in the mother in 21 (of which 13 were macerated and 8 were fresh), and he concluded that syphilis could be justifiably diagnosed in 4 of these, who showed a combination of secondary attributes as follows: (1) A, B, E, C; (2) A, B, E; (3) A, E, C; (4) A, B, C.

He believed that the combination of these findings was a justification for the diagnosis of fœtal syphilis in the absence of the *S. pallida*. Chondro-epiphysitis alone was sufficient, as it was absolutely pathognomonic. He classed seven other fœtuses, showing a combination of a positive maternal W.R. and enlargement of the liver and spleen as "probable syphilis," though he did not regard any of these conditions as sufficient for diagnosis by itself. Active signs or a history of syphilis were obtainable in only six of the mothers of the 37 spirochæte-positive fœtuses.

Latent syphilis, not only in the mother but in the fœtus, was of importance, especially in view of the fact that in about 20 per cent. of the macerated fœtuses Dr. Holland was unable to discover the cause of death. He quoted the history of one case to illustrate the important question whether any of these had died from syphilis. If so, in what way had the disease acted in killing the fœtus? This part of the question, he said, was one which called for further investigation.

In answer to a question by Mr. GIBBS, Dr. HOLLAND explained the pathology of chondro-epiphysitis, which was pathognomonic of congenital syphilis. If the end of the bone were cut through longitudinally the line joining the epiphysis to the diaphysis appeared thick and irregular.—Mr. ULYSSES WILLIAMS said that 15 per cent. of the stillborn fœtuses examined by him under the X rays showed a great thickening of this line.—Dr. HENDRY said that chondro-epiphysitis was practically pathognomonic, but sometimes the line was doubtful and sometimes had only small dentations. With regard to Dr. Routh's contention that chorionic ferments prevent the manifestation of syphilis in the first pregnancy, some of his negative cases had developed positive W.R. after pregnancy.—Dr. ROUTH expressed pleasure at the support given to his views on granules; no chorionic ferments had as yet been isolated. He suggested that the cases described by Mr. Adams and Mr. Gibbs were suffering from primary or secondary syphilis which became latent during pregnancy when appropriate treatment enabled healthy children to be born. Answering Dr. HOLLAND, he said that the absence of spirochætes in the fœtus made the supposition of an earlier form likely. As regards frequency, the conclusion of the Royal Commission was that 20–25 per cent., not 50 per cent., of the stillbirths were caused by syphilis.—Mr. ADAMS objected to the use of the external jugular vein and still more to the anterior fontanelle for obtaining blood from and administering drugs to infants. It was like sending a Rolls-Royce to fetch a pound of tea. Intramuscular injections could be given in glucose without local irritation and the pricking of a foot which had been placed in hot water would easily yield all the blood necessary for a W.R.

SECTION OF SURGERY.

A MEETING of this section of the Royal Society of Medicine was held on Nov. 3rd, Mr. W. G. SPENCER, the President, being in the chair, when a discussion took place on

Unusual Cases of Gunshot Injury to Blood-vessels.

The PRESIDENT, in opening the discussion, described a number of cases which he had selected because of their unusual character.

In the first case there was simultaneous wounding of the posterior tibial, the anterior tibial, and the peroneal arteries. Without any obvious reason a sudden swelling appeared in the calf, and it was recognised that a diffuse aneurysm had supervened. After ligature of the three above-mentioned arteries all bleeding ceased, the wounds healed without inflammation, and complete use of the leg was slowly recovered. The President thought that the simultaneous wounding of all three arteries was probably due to the bullet chipping off and driving before it fragments of bone from the tibia, and he considered that all three arteries being ligatured without arresting the circulation beyond was doubtless due to the dilatation of the anastomotic circulation during the time which elapsed between the injury and the development of the diffuse aneurysm.

The second case was that of a gluteal aneurysm cut into a year and a half after the injury. There had been laceration of the gluteal muscles and injury to the ilium and pieces of the ilium had been removed during the patient's stay in various hospitals. After a year the wound healed, but suppuration then recurred. At operation an arterio-venous aneurysm was cut into, which reached about an inch above the sciatic notch. The ligature failed to hold and it was found necessary to tie the internal iliac artery by the trans-perineal method, the venous hæmorrhage being checked by plugging the wound firmly. No further complication occurred and the wound healed in about six weeks. In this case the presence of an aneurysm was unsuspected; there was no sign of it on palpation owing to the covering by dense scar tissue. Perhaps the existence of the arterio-venous aneurysm might have been discovered by auscultation. Had this been the case it would have been better to have ligatured the internal iliac artery first instead of after the aneurysm had been cut into.

In the third case there was a wound of the commencement of the left axillary artery and of the axillary vein, necessitating amputation of the upper extremity. Sudden severe arterial hæmorrhage occurred from the neck, which could only be controlled by firm digital pressure. It was discovered that the axillary artery had been wounded as it lay on the first rib, and that the axillary vein was also injured. The hæmorrhage was definitely arrested by ligature. Further exploration showed the presence of a comminuted fracture of the scapula with wide necrosis and suppuration infiltrating the muscles on both surfaces of the bone; the fracture had extended into the glenoid cavity and there was pus in the shoulder-joint besides recent extravasation of blood. Hence an interscapulo-thoracic amputation was necessary. Healing was complete in about two months and when the patient was last seen the scar was free from pain or tenderness.

The fourth case was one of secondary hæmorrhage of the tongue. There was a widely gaping wound in the *left* submaxillary region and a compound comminuted fracture of the horizontal ramus of the mandible immediately in front of the angle on the *left* side. A bullet coming from the man's *right* had cut the *right* angle of his mouth, entered the *right* side of the tongue and, passing horizontally across, emerged into the mouth opposite the *left* pillar of the fauces. It next produced the compound comminuted fracture of the *left* horizontal ramus in front of the angle, and carried away some of the upper molars. The bullet thus drove the fragments of bone outwards superficial to the blood-vessels, and so made a wide wound of exit extending out as far as the left mastoid process. Ten days after the injury there occurred arterial hæmorrhage into the mouth on the *left* side, which was temporarily controlled by packing. At operation the hæmorrhage was found to be coming from a hole in the tongue on the *left* side. The track was followed by laying it open across the dorsal aspect of the tongue, when it was found that the *right* lingual artery had been wounded about the origin of the dorsalis linguæ, whilst the *left* artery was intact.

In the fifth case there was a wound involving the left carotid artery, internal jugular and vertebral veins, a diffuse aneurysm being produced. X ray examination showed the presence of a fragment of shell anterior to the left transverse process of the sixth cervical vertebra. Later a diffuse aneurysm formed. The common carotid artery and internal jugular vein were first ligatured below the site of the injury, and were then exposed and ligatured above the aneurysm. It was found that the fragment of shell had produced a lacerated wound in the common carotid artery and jugular vein about an inch in length. Further oozing of blood followed the removal of the foreign body; it was assumed to come from the vertebral vein, as it could be controlled by the finger pressing just below the sixth transverse process, and no pulsation could be felt there; it was controlled by a gauze plug. The wound healed without complication. The patient recovered consciousness but exhibited complete right hemiplegia and aphasia. Food escaped from his mouth unless it was inserted far back. He understood all that was said, but in attempting to speak giggled and made guttural noises. Five months after the operation he could walk without a stick, but had still some spastic rigidity about the right knee. There was some further improvement in the right arm and in speech, but both were still much impaired in function when the man was examined two years after the operation.

The sixth case was one of wounding of the left vertebral artery consequent on fracture of the atlas, followed by diffuse aneurysm which proved fatal. A bullet had entered immediately behind and below the left mastoid process and had fractured the left horizontal ramus of the mandible at the junction of the bicuspid and molar teeth. An X ray photograph recorded merely a fracture of the mandible. There was no sign of the foreign body, which presumably had escaped by the mouth. A few days after admission to hospital attention was attracted for the first time to a swelling under the scar below the left mastoid process with induration around, and it was supposed that suppuration was threatening to recur at the point of entry. The next day it was noted that the swelling yielded an aneurysmal pulsation and a systolic bruit, and the diagnosis

was made of a suppurating aneurysm connected with the external carotid artery or its occipital or posterior auricular branch. Ligature of the external carotid artery, however, did not arrest the pulsation in the swelling, and it was conjectured that the occipital artery arose below the level of the ligature. Whilst searching for it the aneurysm was penetrated, and there was a sudden gush of blood under high pressure. A fracture was palpated splitting horizontally the left transverse process of the atlas, and the blood could be felt to spout through the fissure so made. Much difficulty was experienced owing to previous glandular inflammation and recent infiltration by blood. An attempt to expose the vertebral artery between the fourth and fifth transverse processes failed, and a ligature was passed so as to include the artery and vein as well as the muscle between the transverse processes, thus controlling hæmorrhage. The patient did not recover consciousness; there was no reaction to the treatment for shock, and he died eight hours after the operation. A post-mortem examination was not permitted. There was nothing beforehand to draw attention to an injury to the left vertebral artery on the arch of the atlas. It would appear that as the bullet entered it struck the tip of the transverse process of the atlas, causing a horizontal fissured fracture, and a splinter from the fracture punctured the artery. Had one been put right before the commencement of the operation the safest plan would have been to have tied the right vertebral artery first. The President believed the immediate cause of death to be an extravasation of blood which compressed the meninges about the foramen magnum and atlas.

The seventh case was one of excision of an aneurysm which communicated with a plexus of anastomosing vessels. The superficial femoral artery had been wounded in Hunter's canal and operated upon. No details could be obtained. An aneurysm developed, and at the operation, after removal of the superficial portion of the sac, there was noted, besides the artery entering and leaving the sac, three equally large vessels opening into the sac on its deep aspect. The remainder of the sac was sutured, but the aneurysm subsequently dilated and began to point. At the second operation the aneurysm was excised completely; the three large arteries communicating with the profunda femoris were of the size of the superficial femoral itself, and several other small arteries entered the sac. When last seen the patient had regained good use of the limb.

Sir GEORGE H. MAKINS also referred to cases which possessed some unusual characters. He first mentioned the occasional loculation of the sac met with in false aneurysms following gunshot injury. It was obvious that the blood escaping from a wounded artery tended to spread in the direction of least resistance, either along the vascular cleft between the muscles, or along the course taken by the missile which caused the injury. The last named was of most importance with regard to the occurrence of loculation, the missile passing from one to another compartment of a limb or the trunk. The commonest example was furnished by wounds traversing the thigh, where it was not uncommon to find a false aneurysm in the femoral vascular cleft and a large blood cavity or mass of clot in the adductor region, the two being connected by a narrow neck at the point at which the missile had pierced the facial boundary which separated the two compartments. Another common occurrence was the primary formation of two pools of blood on either side of the interosseous membrane between the bones of the forearm or leg. In any of these cases the collection of blood in the compartment of the artery usually coagulated and formed no part of the final aneurysmal sac. Occasionally the secondary portion of the sac might be cut off, the contained blood might deposit clot, and the fluid serum might remain in direct apposition to, but not in connexion with, the definite aneurysm. In illustration he mentioned a case of wounding by a bullet of the second portion of the subclavian artery. An extensive extravasation of blood into the area of the posterior triangle of the neck resulted, a part of the effusion being deep and limited by the deep cervical fascia, a second portion being superficial to that structure. A well-defined aneurysm was found beneath the anterior scalene muscle, while superficial to the fascia a large fluid collection remained. The matter was one of practical importance because pulsation was communicated to the fluid of the superficial cavity and the condition was thought to be one of immediate danger. An operation on the fourteenth day showed a loculus full of straw-coloured serum, and it was evident that no urgency had really existed for early operation. In ten cases in which there was an injury to the subclavian artery which at the same time had been the source of the blood in a hæmothorax the subclavian aneurysm was small and developed tardily. It was assumed in explanation that the blood passed in the direction of least resistance into the pleural sac, and any larger primary collection of clot or blood in the neck did not take place. The sac in traumatic aneurysms was sometimes formed by unlikely structures. He mentioned a case in which an old tuberculous cavity in the apex of the right lung provided the sac of an aneurysm, or rather an arterio-venous hæmatoma, which formed in connexion with the innominate artery. The pleural sac had been obliterated by adhesions secondary to the tuberculous disease, hence the blood from the wounded artery and vein passed in the direction of least resistance into the cavity of the lung. The patient died on the seventh day after profuse hæmoptysis. Mr. Lawford Knaggs had published a case in which the sac was located in the substance of a fractured humerus, raising the suspicion that a malignant tumour had to be dealt with. More than one case had been observed where ossification of the sac was commencing at an early date. This had been seen particularly in the thigh in instances in which the femur was implicated, and the condition threw some light on that of traumatic myositis ossificans. It would be of interest to know if any cases of traumatic aneurysm of the aorta had been observed. In the War Office collection several wounds of the aorta were to be seen, some so limited in extent that there was reason to believe that if the patient had not died the injury might have remained undetected. Two specimens of extensive wounds were of interest. In one case there was a large arterial hæmatoma, and the patient died on the sixteenth day as the result of hæmorrhage and toxæmia, and the abdominal swelling had not attracted attention during life. In the second a false aneurysm of the thoracic aorta was reaching the condition of a well-defined sac when it burst into the gullet on the thirty-seventh day. The rarity with which infection took place was somewhat remarkable. In looking through a large series of cases a number in which fragments of shells were found within the sac rendered this the more striking, since the clot must have to contend with gross contamination. It might well be, however, that some of the numerous cases of early secondary hæmorrhage or extension were really to be referred to this cause. Infection might also be the explanation of tardy development in some of the cases in which an aneurysm was only detected at a late date. Experience gained in the war familiarised us with the effect of infection on partially injured vessels, in giving rise to secondary hæmorrhage, and to development of aneurysms in the exposed extremities of large arteries in infected amputation stumps. He asked whether any members present had seen well-developed venous sacs in cases of arterio-venous aneurysms. For many reasons he was inclined to doubt the occurrence of this form of arterio-venous aneurysm, although the description of it was classical. One such specimen was contained in the War Office collection.

Mr. G. T. MULLALLY described four cases in which a foreign body was lodged in vessels. In the first case the fragment appeared to be on the left side of the ninth dorsal vertebra, and in gouging it out profuse hæmorrhage was followed by death. The fragment was situated partly in the bone and partly in the thoracic aorta. In the second case a fragment of wire $\frac{1}{8}$ in. long was situated in the popliteal artery, causing thrombosis. The patient died from recurrent hæmorrhage. The third and fourth cases showed variation in the peripheral pulse as a result of the lodging of a fragment; in the third case the fragment was in the superficial femoral artery, and in the fourth case it was in the axillary artery. He mentioned two cases in which the injury was in an unusual position. In one case the superficial femoral vein was divided below the bifurcation of the femoral artery, and there was a tear at the junction of the superficial and deep femoral arteries; in the other there was a small transverse

tear on the right side of the subclavian artery about an inch from its origin. He spoke of two instances of vessels being ruptured without being touched by missiles. In one the peroneal artery was ruptured; in the other the anterior tibial compartment was not opened, but the venæ comites of the anterior tibial artery contained four tears, though the artery was not touched.

Mr. R. L. KNAGGS, Mr. CYRIL NITCH, Mr. A. W. SHEEN, and Mr. J. E. H. ROBERTS also took part in the discussion.

SUB-SECTION OF ORTHOPÆDICS.

Exhibition of Clinical Cases.

A MEETING of this section of the Royal Society of Medicine was held on Nov. 2nd, Mr. E. LAMING EVANS, the President, being in the chair, when clinical cases were exhibited.

Multiple Congenital Dislocations.

The PRESIDENT showed a case of congenital dislocation of the knees with associated deformities at the elbows, hips, and ankles, in a boy, aged 15 years, who was 44 inches high. He was somewhat backward, somnolent, but good-natured. He could stand and walk short distances without help, but his normal mode of progression was by means of crutches. In the standing position there was a posterior projection of the ham region through an angle of 40°–50°, which was caused by the upward and forward dislocation of the tibia, the salient point of the angle being the two femoral condyles. X ray examination showed that the joint was locked by contact of the posterior surface of the tibial condyles against the anterior surface of the femoral shaft above the normal cartilaginous surface for the patella. In the recumbent position the whole limb was rotated outwards at the hip-joint, so producing the appearance of a valgoid condition, but the two femoral condyles could be felt clearly upon the inner side. The patella was present on both sides; flexion was checked at 5° of hyperextension by the shortening of all the structures in the front of the joint. The hip-joints showed shallow acetabula. On the left side only a quarter of the head was covered by the acetabular roof; on the right side one-third was covered. Both femoral heads could be subluxated by manipulation. The heads of both radii were dislocated forwards and upwards. It was proposed, after obtaining plantagrade feet, to excise the knee-joint.

Mr. R. C. ELMSLIE considered excision of the knee-joints to be the best method of treatment in order to obtain ankylosis. At such a late age he would not care to try to get a flexible knee-joint. The hips would allow the patient to walk with stiff knees.

Mr. ELMSLIE gave a further report on a case of

Cyst of the Head of the Tibia,

which he had shown before the section at the meeting held on March 2nd. The cavity contained brown fluid, but there were no solid contents; the walls consisted of bare bone which was covered in places by a grey membrane. Microscopic examination showed that the bone around the cyst and the marrow were both normal. The grey membrane consisted of fibrous tissue, in parts very vascular and cellular. Giant cells were not a conspicuous feature. In some places there were traces of a very cellular tissue, which lay on the inner side of the fibrous membrane; this consisted of small round cells and was very vascular, the vessels being fully formed. Most of the solid matter obtained from the interior of the cyst proved to be blood clot.

A discussion took place on Mr. H. A. T. FAIRBANK'S case of

Deformities Associated with Chronic Nephritis,

which was shown before the section on Oct. 5th.[1] The patient was a girl of 15 years, in whom there was genu varum, some enlargement of the lower epiphyses of both tibiæ and fibulæ, and curving of both ulnæ and radii. X ray examination showed, besides other abnormalities, a crack running into the shaft on the outer side of each tibia for about three-quarters of an inch, nearly parallel to the adjacent portion of the epiphyseal line. Mr. Fairbank said that Mr. D. H. Paterson had reported three cases before the Section for the Study of Disease in Children in April last. In these cases X ray examination showed the presence of multiple fractures in the juxta-epiphyseal region of the long bones, while microscopic section of the diaphyseal bone in this region showed deficient calcification and irregular ossification somewhat similar to rickets, but the epiphyseal lines were straight. In the case shown the X ray appearances were quite unlike rickets. He suggested that the cracks in the tibiæ in his case were the first signs of a juxta-epiphyseal fracture which would gradually spread till complete. In Mr. Paterson's cases there was no history of the children having suffered from clinical fractures, though the X ray examination revealed that such had occurred. Since the case was shown he had seen in King's College Hospital Museum a complete specimen of an adult dwarf which presented many deformities of the long bones, and short forearms not unlike the forearms in this case. The ulna was the shorter bone of the two, and the radial articular surface was very oblique, as was seen in the radiograms of this case. There was also maldevelopment and fusion of vertebræ in the upper dorsal and in the lower lumbar and lumbo-sacral regions.

Mr. D. H. PATERSON spoke of the cases which he had shown and of those which had been described by Dr. Hugh Barber of Derby, Dr. H. Morley Fletcher, and by Dr. H. C. Cameron, who described them as osteomalacia associated with chronic nephritis. In the five cases reported by Dr. Barber death from uræmia had followed operation. He therefore urged the importance of careful examination of the urine in children and young adults who were brought to orthopædic surgeons for operation for multiple deformities in order to avoid a possible fatal issue. He exhibited radiograms of his cases showing areas of uncalcified bone in the upper ends of the tibia which resulted in fracture.

Mr. B. WHITCHURCH HOWELL showed a case of

Internal Derangement of the Right Knee-joint

in a boy of 8 years, the result of a blow on the front of the right thigh above the patella. Much synovitis followed. He had been treated at hospital by a compression bandage and gutter splint. When the fluid had subsided it was found that he could not extend his knee to the full extent, any attempt to do so passively producing pain, especially behind and on each side of the ligamentum patella, in which area the tissues were thickened. There was no abnormal mobility. X ray examination showed injury to the bone of the forepart of the tibial plateau, chiefly in the middle line, suggestive of a discoid-shaped loose body. Mr. Howell asked for opinions as to the exact nature of the injury and the best line of treatment.—Mr. E. MUIRHEAD LITTLE considered that a small portion of bone from the head of the tibia had been detached. He would splint for a time in an endeavour to recover the lost degree of extension.—Mr. ROWLEY BRISTOW thought the condition was one of ecchymosis in the infrapatellar pad of fat, and suggested raising the heel of the boot in order to limit extension. He would not advise exploration without more conclusive evidence of the presence of a loose body.—Mr. ELMSLIE would straighten by splinting, under anæsthesia if necessary, for a month or six weeks.—Mr. HOWELL, in reply, felt that there was a bony block which could only be removed by operation. Splintage had already been tried.

Mr. FAIRBANK also showed a case of

Paralytic Subluxation of the Hip with Paralysis of Adductors.

The patient was a girl of 4 years, who had had an attack of poliomyelitis at the age of 4 months. She had never walked, but could sit up. She lay with the pelvis tilted up on the right side; there was a lumbar curve to the left with well-marked rotation. The right leg seemed to be completely paralysed, including all the muscles about the hip-joint, with the possible exception of the rectus femoris. The head of the

[1] Report in THE LANCET, Oct. 23rd, p. 851.

femur was subluxated on the upper lip of the acetabulum. Adduction was slightly limited as compared with the other side, but abduction was excessive. There was no response to faradism in any muscles of the right leg. The ankle was flail. In the left leg the adductor longus was the only adductor which was active; the hamstrings and gastrocnemius were also active. There was equino-varus, now in process of correction. Radiograms of the right hip confirmed the diagnosis of paralytic subluxation. There was nothing to suggest that the displacement was congenital in origin. The case was shown on account of the rarity of paralytic dislocation of the hip, and more particularly because the displacement in this case seemed to have occurred without adequate cause. The few similar cases he had seen had all shown active adductor muscles and weak or paralysed abductors. Except for the habitual position of adduction in this case there seemed to be nothing to account for the displacement, the paralysis being complete.

Mr. FAIRBANK also showed the skiagrams of another case of Paralytic Subluxation of the Hip-joint in a girl of 14 years, in whom the adductors were active and the abductors paralysed.

SECTION OF LARYNGOLOGY.

EXHIBITION OF CASES AND SPECIMENS.

A MEETING of this section of the Royal Society of Medicine was held on Nov. 5th under the Presidency of Dr. W. JOBSON HORNE.

Leontiasis Ossium.

Dr. H. LAMBERT LACK showed a woman the subject of this condition. The extensive thickening of the bones of the skull and face caused marked deformity, and the exhibitor asked if any treatment would improve the patient's appearance.

Dr. A. J. HUTCHISON spoke of a boy aged 15, who was under his care some years ago with a similar condition. For three years the boy had nasal obstruction, which seemed to pass off; but it returned later accompanied by swelling of the face, which increased rapidly and much disfigured him. Microscopically it was sarcoma, but it was thought to be no more than mildly malignant.—Dr. W. S. SYME said he had seen the condition associated with suppuration.—Mr. E. D. DAVIS said the late Sir Victor Horsley operated on six such cases, and found it was vascular, inflammatory, rarefied bone. Mr. Davis had himself had cases to treat but had been unable to find any cause. Though sepsis and syphilis had been excluded the increase persisted.—Dr. JAMES DONELAN spoke of a case in which the affected bone of the skull was one and a half inches thick. It was thought to be due to irritation followed by infection.—Mr. H. D. GILLIES said the origin of the trouble in this case was attributed by the husband to removal of the teeth, and probably there was a septic focus in the alveolus of the jaw.

Multiple Pharyngeal Polypi.

Dr. WILLIAM HILL showed a patient, aged 55, who had had multiple polypi in the deep pharynx. A pedunculated polypus was regurgitated from the gullet into the pharynx, and it was found to be attached to the under-surface of Killian's pharyngeal lip. The growths were removed.

Recurrent Paralysis with Tongue Involvement.

Mr. W. HOWARTH showed two cases of recurrent paralysis, with involvement of tongue and palate.

The first patient noticed an alteration in his voice four years ago, and he had since lost weight and had indifferent health. Two years ago there was complete fixation of the right side of the larynx. X rays showed coarse striation of the upper part of the right lung. Wassermann was negative. Later there was partial atrophy of the right side of the tongue, with difficulty in swallowing and regurgitation of fluids through the nose. Local bulbar palsy had been suggested as the cause of the symptoms. The second case was that of a lieutenant whose left orbit was wounded by a machine-gun bullet four years ago, destroying the eye, the wound of exit being an inch behind the right mastoid process. There was now complete deafness in the right ear, total paralysis of the right side of the larynx, some difficulty in swallowing, partial atrophy, and loss of mobility of the right side of the tongue, and much drooping of the right shoulder. Probably the bullet damaged fibres of the vagus, glosso-pharyngeal, hypo-glossal, and spinal accessory nerves in the region of the foramen ovale.

Dr. HILL said the usual view was that cases of so-called unilateral bulbar paralysis were due to a tumour in the pontine angle. The prognosis was not necessarily very bad.

Cyst of Vocal Cord.

Mr. W. M. MOLLISON showed by means of the epidiascope a cyst, 2 mm. in diameter, which he had removed from the vocal cord of a trained nurse by the direct method. Microscopically it was found to be a cyst lined with ciliated epithelium. He also showed a tonsil of a boy aged 6, which was found to contain giant-cell systems.

Mr. W. ROSE, discussing the second case, said it was not very rare to find microscopical evidence of tubercle in tonsils removed from children who had obvious tuberculous glands in the neck.—Dr. DAN MCKENZIE said it should be recognised that in the case of enlarged—presumably tuberculous—glands in the neck the tonsils were usually smaller, not larger, than normal.—This was confirmed by Sir WILLIAM MILLIGAN and the PRESIDENT.

Lympho-sarcoma of Post-nasal Space Treated by Radium

Mr. C. W. HOPE exhibited a man, aged 34, who was admitted to hospital on account of nasal obstruction with occasional blood-stained nasal discharge. A large bluish-red mass in the post-nasal space was found, pushing down the soft palate, a large mass behind the left posterior faucial pillar, and a smaller swelling on the right side. Wassermann was negative. Scattered glands were found, one examined being reported to be lympho-sarcoma. Treatment by radium buried in the growths (60 to 30 mg.) resulted, in less than a month, in the clearing of the post-nasal space, a reduction in the size of the faucial pillar, and the glands in the neck being brought to one-third their previous bulk.

Mr. H. TILLEY related a case in which a man, aged 72, had a large tonsil and a "throaty" voice. This was treated by galvano-cautery about twice a week and it disappeared. A few months later the patient complained of discharge from one ear and nasal obstruction. It was due to reappearance in the post-nasal space of a sarcomatous tumour. It disappeared after applying radium once or twice; breathing and hearing became good again, and the discharge from the ear ceased. When next he appeared he had a mass over the sterno-mastoid, and again after radium was applied it vanished. About ten months later the patient consulted a leading oculist on account of proptosis, probably due to recurrence behind the orbit. He died in a nursing home after vomiting a good deal of blood. Mr. Tilley's prognosis in this case was therefore grave.

Sir WILLIAM MILLIGAN raised the question of radium possibly inducing severe blood changes, such as the patients referred to exhibited, and which his own patients who had had a similar treatment showed. His experience was that this severe anæmia did not occur in subjects of lympho-sarcoma who did not have radium applied.—Mr. ANDREW WYLIE spoke of a case of lympho-sarcoma who contracted erysipelas accidentally, and in three weeks the growth had disappeared.

Diagnosis of Carcinoma of Larynx.

Mr. SOMERVILLE HASTINGS showed a woman, aged 52, who had sprouting granulations on one cord, a portion of which was removed and reported to be epithelioma. The Wassermann test, then and subsequently, was returned as negative. Iodides were, however, given and proved so beneficial that the exhibitor regarded it as a syphilitic case, in spite of the expert pathological finding.—Mr. ROSE agreed there was no evidence of epithelioma in the larynx at present, and did not think the sections were those of epithelioma.—Mr. HOPE did not regard the benign course as contradicting the microscopist's view that it was epithelioma, as many of these cases showed very low malignancy.

Lupus Treated by Sodium Iodide and Ionisation.

Mr. DOUGLAS HARMER and Mr. T. H. JUST showed two male patients, aged respectively 18 and 41, whose lupus was successfully treated on the Copenhagen plan—sodium iodide and ionisation. The younger patient had active lupus in the upper part of the vestibule on each side of the nose, the whole hard palate and part of the soft were covered with nodules, and the epiglottis was nodular and partly ulcerated. During four months he had had 13 treatments by ionisation. The second patient came with the skin covering the cartilaginous parts of the nose much thickened and swollen, the anterior nares and columella were ulcerated over their whole surface and covered with crusts. He had had 15 ionisation treatments in seven months.

Actinomycosis of Upper Jaw.

Mr. HARMER and Mr. JUST also showed a butcher's assistant who, last February, had a tooth removed to relieve an abscess in the upper jaw. The face swelled, and pus escaped externally, and œdema of the lower eyelid supervened. A subperiosteal abscess was opened, and the pus contained actinomycotic granules. From these an autogenous vaccine was prepared, and under treatment by this the inflammation was gradually subsiding.

Other cases were also shown and discussed.

ROYAL MEDICO-CHIRURGICAL SOCIETY OF GLASGOW.

THE second meeting of the society for the session was held in the Faculty Hall, Glasgow, on Nov. 5th, when Dr. LEONARD FINDLAY made a communication on

Epidemic Encephalitis (Encephalitis Lethargica) in Childhood,

based on an analysis of 23 cases observed during the present year. Most of the cases sickened during the month of May and 20 were boys. The salient features were sudden onset with or without fever, choreiform movements and some form of paralysis, most frequently of a cranial nerve and especially of the intrinsic or extrinsic muscles of the eyeballs. In some of the early cases marked congestion of the optic discs was observed. The chorea passing off, the child usually passed into a state of lethargy which was more less pronounced and lasted for varying periods. On recovering from the lethargy, the most peculiar night restlessness appeared, and this, he stated, has been a most typical and striking feature of the cases. The children were unable to sleep at night, but spent the time shaking the pillows, arranging the bedclothes, performing duties of the toilet, muttering and singing to themselves. They might even get up out of bed, dress themselves, and go out into the streets to play; they also developed dirty habits—e.g., defæcated on the floor and smeared the bed and bedding with the excreta. During the day at this period nothing abnormal except the remnant of paralysis may be noted, or a certain degree of drowsiness might be present. Suggestion was tried without effect, although from the tendency of the nocturnal restlessness to disappear on change of surroundings, this condition seemed to be of a psychic nature.

Results of Examination of Cerebro-spinal Fluid.

Dr. CECILIA SHISKIN recorded the results of the examination of the cerebro-spinal fluid in the cases dealt with by Dr. Findlay. Like other workers, she had found no marked change in pressure, colour, sugar-content, cytology, or bacteriology. Lange's colloidal gold test was performed in 20 cases, and a luetic type of reaction was obtained in 16 cases. In some the reaction was as marked as in the case of general paralysis of the insane, but the Wassermann reaction was always negative. It was found that the positive Lange reaction was only obtained when excess of globulin was present. It was suggested that the reaction depended on a combination of globulin and toxin, and that the ætiological factor was of the nature of a spirochæte. This thesis was supported by finding a normal cerebro-spinal fluid act like one from a case of meningitis on being secondarily infected, but in experiments where normal cerebro-spinal fluid was inoculated with spirochætes it was not found possible to induce the luetic type of reaction.

In the discussion that followed, Dr. A. K. CHALMERS, medical officer of health of Glasgow, speculated as to a possible relationship between influenza and the condition described by Dr. Findlay.

Dr. WILLIAM M. ELLIOTT showed a series of microscopic sections illustrative of brain lesions in epidemic encephalitis.

Reviews and Notices of Books.

HUMAN PARASITOLOGY.

With Notes on Bacteriology, Mycology, Laboratory Diagnosis, Hematology, and Serology. By DAMASO RIVAS, B.S. Biol., M.S., M.D., Ph.D. London and Philadelphia: W. B. Saunders Company. 1920. Illustrated. Pp. 715. 35*s*.

AN up-to-date text-book of human parasitology has long been overdue, so that a pleasant feeling of anticipation is aroused on turning over the pages of this attractive-looking volume. The book is well printed on good paper and illustrated with 422 figures and 16 plates, several of them coloured. Of the former 127 have been borrowed from Brumpt's "Précis de Parasitologie" and 41 from Castellani and Chalmers's "Manual of Tropical Medicine," and while the book contains little information which cannot be found in either of these volumes many of the extreme views expressed in the latter have been reproduced here. It appears that the author has not followed the literature of the last few years and has relied for much of his information on published text-books, which are themselves out of date. The book gives a good general survey of the extent of human parasitology, but as a text-book for students we feel that it may mislead.

The Protozoal section is behind the times. Chromidia are said to be derived from cytoplasmic remains, while mitosis is defined as a primary division of the nucleus into two parts followed by a similar division of the cytoplasm. *Entamœba coli* is said to be readily cultivated, while *E. histolytica*, according to the author, feeds on decayed matter. *E. coli*, *E. histolytica*, and *E. tetragena* are treated as separate species, while autogamy as occurring in *E. coli* is illustrated by a diagram from Wenyon, though this observer has long since abandoned the view. The author claims to have found *E. histolytica* and its cysts in pyorrhœa, though from his figure the so-called cysts appear to be degenerate polynuclear leucocytes. Many undoubtedly spurious species of entamœbæ are included, while some of the now well-known forms are omitted. The contribution does not compare well with Dobell's account of the amœbæ living in man, which was published over a year ago.

The Spirochætes are considered as flagellates, a view which hardly any accredited parasitologist upholds at the present time, while Schaudinn's views on the development of halteridium and the relation of the intracorpuscular parasites to the trypanosomes are again brought forward, though they have long since been disproved. Leishmania is said to have been found in horses and rabbits, and *L. donovani* to be not inoculable to animals. The culture of leishmania is mentioned in such a manner that the reader would suppose it to be something of a curiosity and not a procedure which is of almost daily occurrence in many laboratories. *Trypanosoma gambiense* and *T. rhodesiense* are both described, and the diseases which they cause in man are said to be similar if not identical, whereas it is well known that the latter produces a much severer type of infection than the former. The description of the development in the tsetse-fly is confused, and a sexual as well as an intracellular stage is mentioned, though neither of these has been demonstrated.

The account of the Human Intestinal Flagellates is as inadequate as that of the entamœbæ, and the same may be said of the coccidia, no mention being made of the three undoubted species which have been described in recent years. The development of the malaria parasites in the mosquito is given as taking place far too rapidly. Yellow fever is classed with the filterable viruses, but it is mentioned that Noguchi and Pareja claim to have found a flagellate in the blood. The author evidently means a spirochæte, but having admitted these organisms to the protozoa he might have given a more complete account of Noguchi's most important work.

The section devoted to Helminthology is better than that on protozoology and is well illustrated with figures

from well-known treatises on the subject. A clearer account, with figures, of the very important development of the schistosomes in molluscs as worked out by the Japanese, and later by Leiper and others, might have been given. The author seems still to regard the direct invasion of the skin by miracidia as worth discussion. No mention is made of the distinctive hosts of *S. mansoni* and *S. hæmatobium*, as demonstrated by Leiper in Egypt. In the table facing p. 242 the genital pore of schistosoma is said to be anterior to the ventral sucker, while on p. 259 it is stated to be behind it. In the somewhat lengthy discussion on the periodicity of filariæ no mention is made of Bahr's work in Fiji, and in connexion with *Filaria loa* Leiper's work on chrysops is completely ignored.

In the section on the Pathogenesis of the Body Louse it is stated that "it has been said to transmit the parasite of relapsing fever and of typhus fever." The student will hardly realise from this that it is now a well-established fact. No mention of the transmission of trench fever by lice is made. On the other hand, the bed-bug is definitely stated to transmit *Leishmania donovani* and *Trypanosoma cruzi*, although in neither case has this been proved to take place. By a curious error on p. 552 *Glossina palpalis* is stated to transmit *Trypanosoma brucei*.

The section on Vegetable Parasites covers much the same ground as Brumpt's text-book. An Appendix gives an account of the uses of the microscope and the methods of mounting worms as museum specimens. Under Bacteriology, Mycology, and Protozoology a few practical hints for laboratory workers are given, but in the examination of intestinal protozoa the use of iodine in the diagnosis of cysts is not mentioned, and in the method of staining entamœbæ the wet fixation is described, but the student is instructed to dry the film before mounting—a fatal procedure. The last chapter deals with Hæmatology and Serology and the usual methods of blood technique and of the Wassermann reaction are described.

In the preface the author protests against the constant change of name to which parasites are subjected, and says that he has followed the International Rules of Nomenclature. Yet we find that four distinct names are used in this book for a single parasite—namely, *Trichiuris trichiurus*, *Trichuris trichiuras*, *Trichocephalus trichiura*, and *Trichocephalus trichiuris*, while in the index we find *Trichiuris trichiura*. Space is occupied with an account of the treatment of malaria, ankylostomiasis, and other helminthic infections, without mention of emetine for amœbic dysentery or of tartar emetic for leishmania and schistosoma infections.

We rise from a perusal of this latest treatise on human parasitology with a feeling of disappointment. It contains much information which is correct and attractively presented. But there are so many errors of statement and omissions as to invalidate its use as a text-book for the student. Advances made during the last few years are passed over or receive casual mention. We trust the author will take an early opportunity of remedying these real defects.

MEDICINE IN ENGLAND DURING THE REIGN OF GEORGE III.

Being the FitzPatrick Lectures 1917–1918, delivered before the Royal College of Physicians of London. By ARNOLD CHAPLIN, M.D.Camb., F.R.C.P. London: Henry Kimpton and Co., and the Author at 3, York Gate. 1920. Pp. 141. 6*s*.

Dr. Chaplin has collected a vast amount of information as to medical matters during the 60 years of the reign of George III., on some of which we made comment in a leading article (THE LANCET, Nov. 24th, 1917). The book now published deals more with the conditions under which medicine flourished than with the art and science itself, and we are a little disappointed that the author did not give us some pictures of the medical life of the time, because no one could be better qualified than he to do so. His somewhat austere and restrained accounts of the condition of the medical profession in 1760, of the state of medical education, of the conflict between the Fellows and Licentiates, of the naval and military medical services, and of public health matters, informing as they are and valuable from their wealth of bibliographical references, call, we feel, for the relief given by personalia.

When Dr. Chaplin departs from his restraint and lets himself go his narrative becomes fascinating. His accounts of Thomas Young and William Charles Wells show how he can write when his subject inspires him. It is curious that although the author writes so enthusiastically of Young and Wells, whose claim to fame rests more upon their researches in physics than in medicine, he does not mention Joseph Black. But for those who have imagination Dr. Chaplin's lectures are stimulating. Take these bald figures from the tables given on p. 135 of "The Composition of the College of Physicians" in 1746 and compare it with the list for 1817:—

1746.		*1817.*	
FELLOWS (54).		FELLOWS (89).	
In West End	7	In West End	38
,, City...	34	,, City...	7
Elsewhere	13	Elsewhere	44
LICENTIATES (24).		LICENTIATES (224).	
In West End	7	In West End	67
,, City...	13	,, City...	25
Elsewhere	4	Elsewhere	132

Here we see at once the gradual flow of the tide of professional and fashionable life from the City, through Soho to the Cavendish-square and Harley-street district, where, however, the consulting physician or surgeon has stayed for the hundred years since 1817. Incidentally we may recall the fact that one of the most notable inhabitants of Harley-street was the infamous and fashionable quack St. John Long, who practised at No. 41 from about 1829.

Much has been written and spoken of late years as to the overcrowded condition of the medical profession in these islands. Dr. Chaplin, however, shows by some figures extracted from "The Medical Register" for 1782 that the proportion of practitioners to population at that date did not differ much from that of the present day. In 1782 there was 1 medical man for every 1752 persons in England and Wales; at the present time the figures are 1 medical man to 1440 persons. For London the figures are: in 1782, 1 medical man to 840 persons; at the present day, 1 to 705 persons. The scale of remuneration has not increased; a modern consultant charges 2 or 3 guineas as against the 1 guinea fee of his predecessors, but the purchasing power of the sovereign has markedly decreased—to say nothing of the existing slump, while the services which he renders are more costly. We rise from reading Dr. Chaplin's lectures with the hope that some day he will give us a more freely written and expanded account of medical men and medicine in the days of George III.—it is not ungrateful to ask for more; it is appreciative.

ANATOMY AND EMBRYOLOGY OF THE NOSE, &C.

The Nose, Paranasal Sinuses, Naso-lacrymal Passageways, and Olfactory Organ in Man: a Genetic, Developmental, and Anatomico-physiological Consideration. By J. PARSONS SCHAEFFER, A.M., M.D., Ph.D. Philadelphia: P. Blakiston's Son and Co. 1920. Pp. 377.

Professor Parsons Schaeffer has produced a large, one might almost say a monumental, book on the anatomy and embryology of the regions mentioned in the title. A feature of the work is the very numerous and excellent collection of illustrations, which are beautifully reproduced and cannot fail to be of great value to anyone studying the anatomical minutiæ of the nares and their accessory cavities. The text is, for the most part, clearly written, in spite of the over-frequent repetition of certain points, but it could be wished that the interests of the practising rhinologist had been more constantly kept in mind, and that those details of especial value in operative work had been elucidated with a thoroughness commensurate with the size and fullness of the book. Thus, there is a table giving the distance of the sphenoidal ostium from the roof

and floor of the sinus, but no mention of its position relative to the mid-plane of the head; the only skiagrams are of dried skulls, and have not been taken with the proper orientation necessary in clinical work; Pfahler's method of accessory-sinus skiagraphy, in which the film is placed in the mouth, is certainly mentioned, but a reproduction of a skiagraph by this method would have been welcome. Of the naso-lacrymal passage the author makes the point that numerous irregularities and diverticula often render probing impossible without the establishment of false passages; his description of the external relations of the lacrymal sac, however, will not greatly help the surgeon who wishes to excise it. Subsequent chapters deal thoroughly with the arterial, venous, and lymphatic supply, and with the nervous connexions, and the "genital spots" of Fleiss are fully discussed. The section on the anatomy of the olfactory apparatus is particularly good, and there is a final chapter on "physiological addenda." The work is a notable contribution to anatomical literature.

EPIDEMIC ENCEPHALITIS

(Encephalitis Lethargica). By FREDERICK TILNEY, M.D., Ph.D., Professor of Neurology, Columbia University, &c.; and HUBERT S. HOWE, A.M., M.B., Instructor in Neurology, Columbia University. New York: Paul B. Hoeber. 1920. Pp. 252. $3.50.

LETHARGIC encephalitis certainly deserves a monograph to itself. During the last three years the disease has appeared all over the globe, in a series of epidemics with features in common and with somewhat unexpected clinical differences, rendering a revue d'ensemble very desirable. The authors have had considerable experience of the disease, and have illustrated their book with personal cases and with good pathological and clinical photographs. On the clinical side the varieties already familiar to the neurologist receive full consideration, and the pathological descriptions are remarkably complete. Their general conclusion is that the affection is allied to poliomyelitis, but not identical with it, and that there is little real evidential basis for regarding it and influenza as one and the same. In view of the fact that clinical data are constantly accumulating, it is not surprising there is little reference to the possibility of one of the manifestations of the disease being analogous to Dubini's disease, though the myoclonic variety is mentioned. The book lacks a good index, and the bibliography might with advantage have been considerably extended. We note with approval the critical attitude of the authors as to the alleged microbial agent and its communication to animals. Many unsuccessful experiments along this line have been recorded; the diplostreptococcus of Wiesner seems to have been a contamination.

NEUROLOGICAL AND OTHER PAPERS.

Reprinted from the Writings of JOHN MICHELL CLARKE, M.A., M.D. Cantab., LL.D. Bristol: J. W. Arrowsmith, Ltd. 1920. Pp. 263. 10s. 6d.

WE are glad to have this memorial of a distinguished neurologist, known to many as a man of wide and scholarly outlook and culture, and trust it will find its place on the shelves of all whose interest lies in the study of neurology. Dr. Michell Clarke made many contributions to his subject, of which only a selection is here given, but it includes his Bradshaw lecture[1] on the nervous affections of the sixth and seventh decades of life, and papers on migraine, cerebellar tumours, spinal cord degenerations in anæmia, toxic polyneuritis, and others already known and valued for their clinical insight and pathological minuteness. Those of a more general nature, forming the second part of the volume, are no less interesting. Several of these papers appeared in our own columns,[2] but memories are short, and new literature ever pushes older contributions into the background, but these original papers of Dr. Michell Clarke will, we are convinced, have an honoured place and an abiding value.

[1] THE LANCET, 1915, ii., 1016, 1069.
[2] THE LANCET, 1907, i., 1772, and ii., 538; 1912, ii., 538.

APHASIA AND ASSOCIATED SPEECH PROBLEMS.

By MICHAEL OSNATO, M.D., Associate in Neurology, Columbia University, &c. Preface by FREDERICK TILNEY, M.D., Professor of Neurology, Columbia University. New York: Paul B. Hoeber. 1920. Pp. 191. $2.50.

THIS readable little book provides a good illustration of the impracticability of attempting to deal with a vast, complex, and controversial subject in comparatively small compass. Dr. Osnato's general thesis is that "intelligence in its widest sense, apraxia, and aphasia are one and the same process, that they develop together and disintegrate together"; and again, "the function of speech and voluntary movement is an integral part of the development of the functions of the entire brain, and is incapable of being anatomically, physiologically, or psychologically separated into centres." To establish so iconoclastic a hypothesis the writer must in the first place supply conclusive pathological evidence of a positive kind militating against cortical localisation, and in the second place explain away some 1500 autopsies on cases of aphasia, which go to show that the function of speech is ordinarily located in the left hemisphere as opposed to the right, and in a certain area of that hemisphere. Neither of these procedures, however, receives any consideration from the author, whose method it is to quote cases favouring his contention and ignore others confuting it. No contribution to a vexed scientific question can have any value if it lacks the elementary virtue of unprejudiced approach.

PSYCHONEUROSES OF WAR AND PEACE.

By MILLAIS CULPIN, M.D., F.R.C.S., Lecturer in Psychoneuroses, London Hospital. Cambridge University Press. 1920. Pp. 128. 10s.

WHAT will appeal to the general medical reader in Dr. Millais Culpin's slender volume is his engaging candour over failures and successes alike, and the complete absence of anything like dogmatism. When we read of his difficulties with patients the author seems to reveal the working of his own mind in a fashion as charming as it is rare in medical literature. Dr. Culpin's general position is somewhat eclectic in that he chooses what he finds useful out of any or all of the varieties of psychotherapy as practised to-day; but he admits that for the moment he is less concerned with theory than with results, and if he cannot hold by all that Freud, for instance, has taught as to origins, he accepts Freudian mechanisms to explain the outcome of his own therapeutic efforts. Thus his summary is that in the majority of the psychoneuroses there are found losses of memory for strongly emotional incidents, and these he endeavours to awaken by getting his patient into a hypnoidal state in which he urges him to live the painful incident over again; emotion usually shows itself, and Dr. Culpin at once seeks to get this emotional revival into fullest consciousness, holding that in this way the symptoms are most likely to subside.

We are using no stereotyped formula in cordially recommending this little book to the physician; and we hope that, since the author states he has found much to learn in his study of psychotherapy, he will also have much to teach.

THE DEVELOPMENT OF THE HUMAN BODY.

A Manual of Human Embryology. Sixth edition. By J. PLAYFAIR MCMURRICH, A.M., Ph.D., LL.D. London: Henry Kimpton. 1920. With 290 illustrations. Pp. 501. 18s.

THIS is one of the small number of books of handy size dealing with the subject of human development, and the fact that it has reached its sixth issue during a comparatively short term of years is evidence that it is appreciated by students of this subject. The reason is not hard to find: the descriptions of the various processes of development are intelligible and straightforward, the illustrations are adequate, clear, and good, and the whole makes a compact little work which should certainly claim the student's attention. This present edition has undergone a certain amount of

revision, with the addition of some new figures, among which we are glad to recognise those which illustrated Streeter's excellent work on the cranial sinuses. We confess, however, to some feeling of disappointment. The book leaves us with the impression that the subjects of some of its chapters might have been advanced further if the author had given less time to the investigation of German writers and more to the study of work produced in England. This thought arises early in perusal, when we read of maturation in the human ovum, but it applies also to other things, such, for example, as the peritoneal disposition and the formation of the heart. In this last connexion it is surely time to recognise also the absurdity of Born's diagram illustrating the mode of division of the heart. In thus hinting at what appear to us to be defects we do not do so with any wish to lessen appreciation of the book, but with a desire to see the best made of an excellent little work.

SYNOPTIC CHART OF CARDIAC EXAMINATION.

Arranged by JOHN D. COMRIE, M.A., B.Sc., M.D., F.R.C.P.E. London: Bale, Sons, and Danielsson, Ltd. 1920. 4*s*. 6*d*.

THE chart consists of a stout piece of cardboard, on which is depicted a diagram of the chest, with the heart mapped out in situ. An inner sliding card worked by tapes indicates, through windows cut in the outer card, the chief physical signs of several forms of heart disease. A pamphlet attached to the back of the chart gives some further information. The idea is ingenious and the information, on the whole, accurate. While a dead chart can never replace the living body for teaching purposes, it may be that the one before us will help the young student to grasp the elements of a difficult subject.

STUDIES FROM THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH.

Reprints. Vol. XXXIII. New York: The Rockefeller Institute. 1920. Pp. 608.

RESULTS of the investigations conducted at the Institute, or elsewhere under its grants, are first reported in a variety of journals and publications. The reports are then assembled in volumes designated "Studies," which appear serially at irregular intervals. Hence it occurs that for 1920 not a few of these publications in the present volume are marked, "Received for publication in 1918." Of the 53 papers included no fewer than 34 are concerned with pathology and bacteriology; 1 each with physiology and pharmacology, chemistry, and experimental surgery; 3 with experimental biology, all three being by the ever fertile and productive Jacques Loeb on amphoteric colloids; while 11 emanate from the hospital of the Institute. Amongst the papers on pathology eight are devoted to lymphoid tissue, including lymphocytosis induced by heat and lymphocytes in natural and induced cancer; others deal with resistance to experimental tuberculosis in mice, effects of exposure to sun's rays, and effects of X rays. There are other papers on X rays, including their direct effects on transplantable cancers in mice. Other communications deal with the susceptibility of the monkey to experimental poliomyelitis, with blood counts in poliomyelitis, and the persistence of the virus of the same disease in the nasopharynx. There is an account of a yeast medium for prolonging the viability of the meningococcus, an account of meningococci meningitis amongst a civil Chinese population, and of the effects of carbonic acid in the cultivation of meningococcus. The action of chlorinated antiseptics on blood-clot and of bile on the clotting time of blood itself are described. There is a paper dealing with the influence of ether and of hæmorrhage on the pressor effects of epinephrine, and one on the blood-pressure curve following an intraspinal injection of adrenalin. Amongst the hospital papers are two on Dakin's solution. E. Uhlenhuth has papers on parathyroids and calcium metabolism, on the thymus and amphibian metamorphosis, and on the relation between the thyroid gland, metamorphosis and growth, all with reference to amphibian larvæ. There are also short contributions on experimental pneumonia, dysenteric bacilli, malarial infections, poisoning by mercuric chlorine and uranium nitrate, aromatic amines, alveolar air, thermobropism in anopheles, and localisation of bacillus abortus in the bovine fœtal membranes. This not complete enumeration will suffice to show the wide scope of the subjects which have occupied the attention of the investigators.

A COURSE OF PRACTICAL PHYSIOLOGY.

Introductory to Physiology and Medicine. By G. A. BUCKMASTER, M.A., D.M., Professor of Physiology, University of Bristol; and H. R. B. HICKMAN, M.A., M.B., B.Ch. Bristol: John Wright and Sons, Ltd. 1920. Pp. 138. 5*s*.

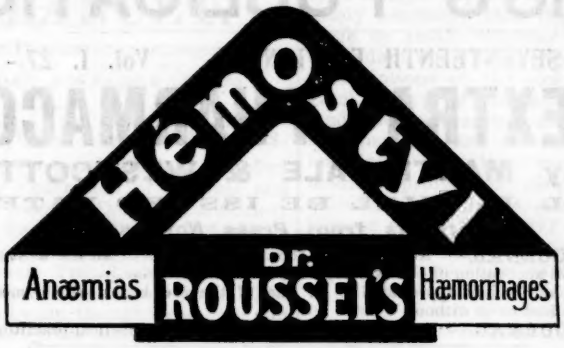
THIS is an account of the course offered in the University of Bristol. Intentionally, no figures or diagrams are inserted, brief instructions only are given for those experiments for which the student requires personal assistance, and demonstrations given to the whole class—for example, on blood pressure or respiration—are omitted. The elementary course (pp. 1–44) describes the usual experiments on the frog's muscles, nerves, and heart, with some simple experiments on the dead mammalian heart, the dissection of the eyeball, and a description of the experiment of Mariotte (1668) and Scheiner's experiment (1650). The "advanced course" (pp. 46–111) has special reference to human physiology, and includes, amongst other matters, short directions for estimation of blood corpuscles, hæmoglobin, pulse-rate and efficiency of heart, alveolar air, cutaneous sensations, reaction time, tendon reflexes, colour perception, and hearing; also instruction in the use of the spirometer, ergograph and plethysmograph, and ophthalmoscope and perimeter. Some selected chemical methods (pp. 112–138) are described, including the determination of urea by urease, the estimation of uric acid, glucose in urine and polarimeter, albumin, ammonia, amino-acids, and blood in urine. Blood spectra and blood crystals are also described. Of modest dimensions and scope, this course is well balanced and not too elaborate or over-laden with details of experiments on the frog; the future work of the medical student in dealing with man is kept in the foreground. The book should prove most useful to the student when he begins clinical work.

AN EPITOME OF HYDROTHERAPY.

By SIMON BARUCH, M.D., LL.D. London: W. B. Saunders Company, Ltd. 1920. Pp. 205. 10*s*.

THE position of water as liquid, solid, and vapour in materia medica is of primary importance, and it forms a most valuable therapeutic agent. Reliable text-books on the subject of hydrotherapy are few, and many are so antique that one leaves them reposing on the top shelf of the library. Professor Baruch's latest contribution, in the form of an epitome, is well arranged and readable. The indications for hydrological methods of treatment and the manner of their application, from the wet pack and cold compress to the latest whirlpool bath, are clearly expressed. This is a book which every practitioner should read. It should be clearly understood that in this country much of this form of treatment is unscientifically applied and is not under medical direction and supervision; hence results much harm and discontent, in addition to adverse criticism as to its value. America appreciates this valuable adjunct to her pharmacœpia, and this book may stimulate some interest in the subject here.

It is questionable whether the massage effect of the whirlpool bath is satisfactory. The maintenance of temperature is beneficial and if followed by properly applied manual massage is excellent in its results. Another form of bath, the sedative pool-bath, has been extensively used during the war. Observations on this are omitted in the section on treatment by sedative baths. The chapter on installations and that on sunstroke might, we think, have been curtailed a little. The information on the former subject is of more value to the architect than to the physician, and the latter is unnecessarily diffuse.



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THE LANCET.

LONDON: SATURDAY, NOVEMBER 13, 1920.

Hospital Principles and Statistics.

WE report elsewhere the proceedings at a conference convened by the Federation of Medical and Allied Societies in the rooms of the Medical Society of London on Friday, Nov. 5th. The object of the meeting was to consider Clause 11 of the Ministry of Health (Miscellaneous Provisions) Bill, which clause no longer exists in its original form. The speakers ranged far and wide, though we should add that they did not depart from the real theme, for all of them discussed, from different standpoints, the principles to be observed if the hospitals of the country were to fulfil their position as centres for the prevention and cure of disease and for the promotion of medical science and education.

The position of the voluntary hospitals with such responsibilities before them, and with their notorious pecuniary plight, became the centre of the debate, and the concrete declaration by Lord KNUTSFORD that, unless money was found immediately, the great London Hospital, with which his name will ever be associated, must close at the beginning of next year, led to a resolution which may be very helpful in existing circumstances. The resolution was to the effect that the time has come when the British voluntary hospital system must be supplemented by State aid, and it included the suggestion that an orderly scheme of obtaining contributions from patients towards maintenance, and combined action between the voluntary hospitals and the Poor-law infirmaries should both be given a trial. The resolution, it will be seen, forms a programme for a wide field of effort and reconciles much divergent energy. Everyone knows the splendour of the work done by the voluntary hospitals, and everyone knows that the subscriptions raised by voluntary contributions in many cases no longer meet current expenses and in no cases leave anything for structural maintenance, improvements, and additions. Three sources of increased revenue for these hospitals are at once indicated by the resolution—namely, improvement in the methods whereby voluntary subscriptions are raised, State aid, and municipal aid. The resolution suggests not that one source is better than any of the others or than any combination of the others, but that all ought to be utilised. The reports of Sir NAPIER BURNETT, as Director of Hospital Service for the Red Cross and St. John, have demonstrated that the plans under which voluntary subscriptions to hospitals are collected are chaotic, inadequate, and old-fashioned in too many cases, and it follows that more money can be expected if heed is paid to the methods of collecting. The State has made grants and has promised further grants to the voluntary hospitals, although the Treasury can only find gradually the money to carry out that central and coördinate scheme which it will be the responsibility of the Ministry of Health later to furnish. Many municipalities are willing, it is believed, to organise the support of hospitals in their own areas, but many ratepayers in those areas, it is known, resent very strongly the proceeding. Where the locality is suitable, and where the population is willing, there can be no objection to municipal support of hospitals. But it is absolutely necessary that these institutions, whether large or small, whether State- or rate-aided, or dependent upon the generosity of the rich or the subscriptions of the sick, should carry out their great future, as the basis upon which preventive medicine is founded, as the source of the best therapeutics, and as the home of progressive learning. And this can only happen if the medical profession, composed of the executive officers of medicine, State or private, preventive or curative, general or special, is called into counsel by hospital authorities, and is treated as a partner in an undertaking and not as a servant of an administration. And this is a broad reading of many of the speeches delivered, as well as of the resolutions passed at the interesting conference last week.

On the same afternoon that the conference was taking place a statement dealing with hospital statistics, prepared by Mr. H. R. MAYNARD for King Edward's Hospital Fund for London,[1] was published, and furnished valuable details as to the position of the London voluntary hospitals. The statement is founded on the published accounts of 109 hospitals, the total being made up as follows: 11 general with medical schools and with an average of over 100 beds in daily occupation, 8 general without medical schools and with an average of over 100 beds in daily occupation, 13 smaller general, 2 hospitals for tuberculous patients, 5 for women, 6 for children, 5 for ophthalmic patients, 3 for cases of epilepsy and paralysis, 14 cottage hospitals, 8 lying-in, and 34 unclassified institutions. These hospitals, taken together with St. Bartholomew's Hospital and the Cancer Hospital, provide a total of 9988 beds in average daily occupation in 1919, the total number of in-patients being 146,585 and of out-patients 1,318,915. The features affecting the London hospitals during the year 1919 are the rise in prices, salaries, and wages, and the loss of payment from naval and military patients. The total ordinary expenditure during the year, including maintenance, administration, and rent, rates, and taxes, but excluding capital expenditure, interest on borrowed money, and contributions to the maintenance of convalescent homes and country branches, amounted to £2,137,755. The receipts from the authorities in aid of the expenditure on naval and military patients amounted to £69,716, or 3·26 per cent. of the total ordinary expenditure, and the balance of £2,068,039 had to be met out of the normal sources of hospital revenue. As the total ordinary expenditure in 1913 was £1,142,938, the London voluntary hospitals had in 1919 to provide out of normal sources, as compared with the year before the war, an additional working expenditure of £925,101, or an increase of 80·97 per cent. The honorary secretaries of King Edward's Fund, in presenting the statement of statistics to the PRINCE OF WALES, the President of the Fund, state that the corresponding increase in 1915 was only about 4 per cent., in 1916 13 per cent., in 1917 27 per cent., and in 1918 40·98 per cent. Comparisons of cost per bed between the current year and the previous year are omitted from the statement, but the average cost of each group of hospitals has been prepared, and will be of great assistance to hospital managers in

[1] King Edward's Hospital Fund for London. Statistical Report of the Ordinary Expenditure of 109 London Hospitals for the Year 1919. Spottiswoode, Ballantyne, and Co., Ltd., 1, New Street-square, E.C. 4. 1s. 6d.

controlling expenditure. The figures record the worst; they deal with London, where the position has always been especially difficult; and the worst does not appear irremediable. But far greater public interest in the hospitals is wanted, not only in London, but throughout the kingdom. If the general public would subscribe and would organise their levies, a surprising relief of financial stress would follow. The Federation of Medical and Allied Societies might do well to hold further meetings, for the recent convention was very instructive, and the more people who understand the questions at issue the more numerous will be the supporters of the voluntary system.

The Treatment of Diphtheria Carriers.

THE "carrier" problem in infectious disease is one of the most difficult and at the same time one of the most urgent questions from the point of view of the hygienist, the bacteriologist, and the medical practitioner. It is incidentally one of great interest to the public, although it may be doubted whether that interest has yet been sufficiently aroused. Nor is the time quite ripe for insisting upon public education, since it must be confessed that efficient methods of discovering the carriers and of rendering them innocuous have yet to be evolved. For these reasons any practical contribution to the question in regard to any of the infectious diseases is to be welcomed, and we draw our readers' attention to a paper in this issue of THE LANCET by Dr. A. REITH FRASER and Dr. A. G. B. DUNCAN, of Aberdeen, on the treatment of diphtheria carriers with detoxicated Klebs-Löffler vaccine.

The authors define a carrier as one "who harbours virulent pathogenic organisms, and is capable of infecting others, though not himself exhibiting any of the clinical signs of the disease." They distinguish between the so-called "positive throats"—which are practically cases of delayed resolution, where the bacilli persist for periods up to three months—and the true carrier, where the bacilli remain for long periods with unabated virulence in spite of energetic methods of disinfection. They point out that in the "positive" throat the bacilli may disappear spontaneously, or after energetic treatment, and that a few doses of stock diphtheria vaccine readily cures them, as shown by Dr. J. L. BROWNLIE. Dr. FRASER and Dr. DUNCAN suggest that a carrier possesses a certain degree of immunity, sufficient to inhibit the organisms but quite insufficient to exterminate them, an assumption which seems warranted by the facts. They are of opinion that many vaccines at present in use are ineffective or incompletely effective because of a high endotoxin content contingent on their method of preparation, this toxic factor necessarily rendering a small dose obligatory where a large dose is essential. They have therefore employed detoxicated vaccines prepared by Dr. D. THOMSON'S method, using very large doses, with results so distinctly encouraging that they may serve to stimulate further research on the same lines in regard to carriers other than the diphtheria carrier. They found that these vaccines caused degeneration of the bacilli and their eventual disappearance in carriers of several years' standing. They record three cases in detail, with the doses given and with the pathologists' reports on the organisms present, showing the change from virulent to non-virulent bacilli and then their disappearance. The quantities of vaccine used are noteworthy, since in one case they worked up from 4000 to 350,000 millions, the latter dose being 3·5 c.cm. in volume. Even with these enormous doses no reaction, general or local, developed.

They regard these vaccines as valuable in the treatment of contacts, convalescents, and carriers, and also in the established disease in which they advise their use in conjunction with antitoxin. For prophylactic purposes they advise doses of 200 to 8000 millions in infants and 8000 to 200,000 millions in adults. It is obvious that no critical judgment of the value of this method can be formed on the small number of cases here recorded, but they were all cases of long standing, and in each case there was an abnormal state of the nose or naso-pharynx, an association favourable to the carrier condition. The success of the treatment in the circumstances is sufficiently striking to warrant extended trials.

The Kidwelly Poisoning Case.

THE verdict in this sordid but sensational case is the one that had been foreseen as inevitable by all medical men as soon as the expert evidence for the Crown that the first Mrs. GREENWOOD had been fatally poisoned by arsenic was countered by medical assurances to the contrary. Similarly the public had agreed on the probable result when the daughter of the victim told the court that she had also partaken of the poisoned cup. The elements of doubt thus introduced into a case where the utmost penalty of the law would follow an adverse verdict sufficed, as they were bound to suffice, to determine the issue, and a unanimous verdict of acquittal set the seal upon general prophecy. The only medical interest in the trial is due to the fact that the differing judgments of medical witnesses in such cases have been over and over again commented upon as a slur on medical science. Thoughtful people should view the matter in another light. Medical science is progressive, and knowledge can only progress by inquiry. As inquiry is multiplied more things pass from the realm of theory, or from the more dangerous realm of deduction, to the realm of positive fact, and upon facts, accepted as facts by the medical profession, members of that profession do not disagree. Medical experts called by the Crown (who cannot be described fairly as witnesses for the prosecution) and medical experts called by the defence should certainly agree upon most salient points in discussing poisoning by arsenic, for the symptoms are classic, and the fatal doses more than approximately known. In the GREENWOOD case no differences of opinion worth mentioning were expressed upon these points. But complete concord could not be expected when the other circumstances were under discussion, while none of the expert witnesses was in attendance on the patient or personally aware of the symptoms manifested.

The jury did not, and could not, receive in these circumstances any uncompromising medical direction, while the verdict has removed the case from the scope of scientific discussion. Had a conviction resulted, especially having regard to the general weakness of the case for the Crown, the differences between the expert witnesses would have been the subject of debate in the interests of the accused. For the future guidance of counsel and of juries such debates may be useful, but it is our experience that authoritative voices are rarely heard in the press on these occasions.

Annotations.

"Ne quid nimis."

THE REGIONAL MEDICAL STAFF OF THE MINISTRY OF HEALTH.

THE scheme for the establishment of referee consultants has just been launched by circulars recently issued by the Ministry of Health to insurance practitioners and to the Approved Societies. The country is to be divided into 27 regions, each with a regional medical officer acting in four divisions under a divisional medical officer. We gave the names of the regional medical officers appointed in our issue of July 17th (p. 147) and need only add here the names of Dr. F. J. Blackley (Bristol), Dr. F. B. Thornton (Reigate), Dr. R. T. Worthington (Lowestoft), and Dr. E. Parry Evans (Llantwit Vardre), who have just been appointed to fill vacancies which have arisen through inability of officers originally nominated to take up the duties of their posts. Each division has a divisional office with subsidiary offices in the various regions. The principal offices are in Manchester, York, and London. In Wales there are three regions acting for the office of the Ministry of Health at Cardiff. The various regional offices are set out in the appendix of the circular. The objects of the scheme may be summarised as two-fold: first, to assist the societies in cases of prolonged incapacity; and, second, to help practitioners by consultation and advice in difficult cases. There are other duties in relation to the Insurance Medical Service in connexion with certification and records, to which we have already made reference in these columns. It is interesting to note that the duties of the new medical officers will not be confined to the sphere of National Insurance, but they will be employed for such other purposes in connexion with any part of the work of the Ministry of Health as may from time to time be found desirable. With regard to the advice of specialists, this is only available at the present stage for the assistance of the referees in deciding what advice he should give the Approved Society or to the practitioner, as the case may be. The functions of the new medical officers are purely advisory. They will not interfere in any way with the treatment of the patient or the responsibility of the practitioner for the welfare of his patient. The new service depends a great deal for its success on the hearty coöperation of practitioners with the regional medical officers. The medical officers will be easily accessible and will welcome inquiries from practitioners on any points of doubt or difficulty occurring in their work in which it is thought that they can give assistance. It is to remove these difficulties that the new service has been set up. If practitioners avail themselves of the facilities afforded, there should be a marked improvement in the efficiency of medical service. This is an important step, but is only a step in the building up of an adequate service. The proper provision of a consultant service with adequate hospital accommodation and laboratory facilities are the next steps to be taken. Until these are provided the Medical Service cannot be said to be complete nor the insurance practitioner to be fully efficient.

A COLLECTION OF NASAL ANATOMY.

THE work of the late Professor A. Onodi, of Budapest, as set out in a treatise, The Anatomy of the Nose and its Accessory Sinuses, was made known in this country as far back as 1894 by Sir StClair Thomson in his "Atlas of Nasal Anatomy." Onodi's later and important investigations on the relationship of the optic nerve to the accessory sinuses, and of these to the brain, were also deemed worthy of an English translation. The beautiful sections and dissections on which Onodi's publications were founded were recently brought to this country for disposal, when Professor Arthur Keith described the collection as the finest on this subject in the world, desiring it for the Hunterian Museum of the Royal College of Surgeons of England, where it would form a worthy complement to the Toynbee and Cheatle collections on the anatomy of the ear. As negotiations were proceeding slowly, and there was some risk of the collection being withdrawn from London, it is fortunate that Sir StClair Thomson and Mr. Philip Franklin have been able to purchase it for a moderate sum, keeping it entire and retaining it in this country. We feel that the Hunterian Museum is its natural destination, and to this the present owners are desirous to hand it for the sum which they paid for it. Only £300 are required, and at their first meeting of the session the laryngologists of the Royal Society of Medicine collected quite a quarter of this sum. But the collection is of almost equal importance to the ophthalmologist, the otologist, and the general surgeon, particularly to the surgeon dealing with the head and brain. We are therefore glad to hear that the President of the Royal Society of Medicine, Sir John Bland-Sutton, is chairman of a committee entrusted with the task of collecting at least £300. More than this sum is wanted, as there are no less than 450 specimens, and it will cost, in addition, between £500 and £700 to satisfactorily mount, label, and catalogue the specimens in the College Museum. The President of the Sections of Surgery (Mr. Walter Spencer), Ophthalmology (Dr. James Taylor), Otology (Sir Charles Ballance), Laryngology (Dr. Jobson Horne), and the Royal College of Surgeons (Mr. H. J. Waring and Professor Keith), together with Sir StClair Thomson, are members of this Committee, and subscriptions can be sent at once to the honorary secretary, Mr. Philip Franklin, at 1, Wimpole-street, London, W. There is no collection of nasal anatomy in the world which can compare with Onodi's in variety, beauty, or value, and we commend the matter to our readers' attention.

THE EDUCATION OF A SURGEON UNDER THOMAS VICARY.

IN the second Vicary lecture, delivered on Nov. 11th at the Royal College of Surgeons of England, Sir D'Arcy Power drew a parallel between the unsettled conditions after the Wars of the Roses and after the Great War. The same need for reconstruction in the medical profession was apparently felt then as is being felt now. Two bodies of surgeons had till then existed in London. The one, a small guild of surgeons proper, mostly attached to the suites of the higher nobility; the other, a guild of barbers whose members looked after the surgical needs of the citizens. In war-time the surgeons served with their lords, while the barber-surgeons remained at home, accumulated wealth, and became a flourishing company. When towards the end of the fifteenth century the impoverished state of the nobility brought lean times to the surgeons they allied themselves with the prosperous Company of Barbers, and in 1540 a United Company of Barber Surgeons was ratified by Act of Parliament. The guild of surgeons had always endeavoured to educate their members and to test their knowledge by examination, while the barbers admitted persons to their freedom after a prolonged period of apprenticeship; by a combination of the two methods a new system of surgical education was introduced. Under Thomas Vicary, the first Master of the United Company of Barber Surgeons, the Company developed a comprehensive system of education. No person could practise surgery in the City of London or within seven miles thereof without passing the examination set by the Company. The bodies of four criminals were obtained every year for dissection; thus anatomy as well as surgery became the basis of examination, and to this there was added such pathology as could be learnt from English translations of Galen's works.

One of the first acts of the Company was to appoint a lecturer on anatomy with four demonstrators under him. Dr. John Caius served for nearly 20 years in this capacity, and so inspiring was his teaching that the Company's anatomical department remained the best in the kingdom for nearly 200 years. The teaching of surgery and pathology was less successful. Both were

taught by lectures at which attendance of every member of the Company was compulsory; clinical teaching was discountenanced. The formal surgical lecture had always been a part of the teaching of the guild of surgeons, and it was undertaken by each member in turn, beginning with "the auncientest" surgeon. After a time the Company decided to abolish this form of lecture and to establish a paid post like that of the lecturer in anatomy, with the stipulation that the lecturer must be paid out of the private pockets of the surgeons who ought to have lectured. The teaching of pathology was still more unsatisfactory, being allotted sometimes to the lecturer on anatomy and sometimes to the lecturer on surgery. Sir D'Arcy Power showed the text-books in current use in the middle of the sixteenth century:—Realdus Columbus for anatomy; Guydo's Questions, John of Vigo, and Tagaultius for surgery; Oribasius's Commentaries on the Aphorisms of Hippocrates and Caius's edition of the books of Galen for pathology; Galen's works, and a little later those of Banester, Clowes, and Bullen. The eternal type of student who likes to get his knowledge in a condensed form was catered for by the Tables of Horatius Morus.

The examination for the licence was conducted by eight specially appointed examiners, of whom four were present at each examination. Rejections were by no means infrequent, and according to the knowledge displayed the candidate was granted a licence for a longer or shorter period, a permanent licence being issued only after a further examination. Later the second examination became optional, being replaced by "The Grand Diploma," which was rarely demanded, and corresponded to the present F.R.C.S., as it was required only by those who intended to devote themselves entirely to the practice of surgery. Apprentices who did not propose to practise in London were not obliged to submit themselves to examination, whereas "foreign surgeons" licensed elsewhere had to pass a nominal test, often too easy, before admission to the Company. This custom frequently brought the Company into grave disrepute. A system of compulsory consultation perhaps formed some safeguard to the public from malpraxis. If a surgeon had a patient in danger of death or likely to be permanently incapacitated he was bound before the third dressing to call in the Master and Wardens of the United Company, who were sworn to perform this duty without exacting a fee. The rule gradually fell into abeyance as the population of London increased. Sir D'Arcy Power gave pen pictures of the band of sixteenth-century reformers—Vicary, Gale, and Clowes, Halle, Banester, and Read—who strove to oust the quacks by improving the practice of the surgeons; and he concluded with a tribute of praise to the Barbers' Company, the members of which had acted as the business partners of the surgeons when their fortunes were at a very low ebb. By their union with the barbers the surgeons were given time to educate themselves and to extend their influence until they became an important profession.

RETROPERITONEAL PERIRENAL LIPOMAS.

ACCORDING to Dr. Walter R. Holmes,[1] of Atlanta, who reports a case in a woman, aged 43, from whom a retroperitoneal lipoma weighing 25 lb. was successfully removed, tumours of this kind are probably the largest solid abdominal new growths. Cases have been reported in which the tumour weighed as much as 70 lb. Of 113 cases collected by Lecène in 1919 88 were in women and 25 in men, so that 75 per cent. of these tumours occur in the female sex. The ages at which they are found range from 1 to 70 years, but the largest number are met with between 40 and 50. The symptoms connected with these growths are remarkably few in spite of their large size, and are referable to pressure. The tumour may press upon the inferior vena cava, causing œdema of the extremities; on the portal system, with ascites and dilatation of the subcutaneous veins of the abdominal wall; and on the spermatic veins, with the formation of varicocele. When the nerve-trunks are affected pain may become a prominent feature. Dyspnœa may arise from pressure on the diaphragm. Lastly, digestive symptoms may result, consisting in loss of appetite, distension, diarrhœa, or constipation. Intestinal obstruction is rare owing to the tumour developing behind the peritoneum and not in direct contact with the abdominal viscera. Owing to the difficulty of the diagnosis the nature of the tumour is usually not recognised till operation or autopsy. The presence of a large abdominal tumour of slow growth, with a smooth rounded surface, soft or semi-fluctuating, without mobility, and extending into the flanks, is suggestive. A tympanitic area corresponding to the distended colon running across the top of the mass may indicate its retroperitoneal character. Retroperitoneal perirenal lipoma has been most frequently mistaken for an ovarian cyst, but it has also been confused with almost all abdominal tumours, as well as with extra-uterine pregnancy. Dr. Holmes emphasises the importance of making a cystoscopic examination in all suspected cases, so as to exclude malignant disease of the kidney. Nephrectomy has been found necessary in 48 of the cases on record, including that reported by Dr. Holmes. The prognosis is grave. Removal of the tumour is difficult, owing to its close relationship to important structures, and the mortality after operation has been 20 per cent. Recurrences following removal are frequent and show a tendency to malignant degeneration.

[1] Journal of the American Medical Association, Oct. 16th, 1920.

ROUTINE STUDY OF MENTAL DEFICIENCY.

WITH the resumption of municipal activities on the termination of the war the Acts dealing with the care of the mentally defective are gradually coming into full operation. Before a defective can be dealt with either by way of a special school, or by being placed under guardianship or in an institution, medical certificates have to be given by medical officers specially approved for the purpose, by the Board of Education in the case of school children or by the local control authority under the Mental Deficiency Act in the case of others. Recently the Board has required some evidence of experience as a precedent to recognition. The practice of local authorities has varied, some recognising all medical practitioners, others demanding proof of competence. The latter is clearly the more satisfactory procedure. Difficulty, however, arises in regard to the nature of the evidence required. For senior practitioners the fact that they have been engaged in such specialised work is adequate; for younger practitioners some special form of certificate or diploma would be desirable. Two forms are at present coming into purview; the diplomas in psychological medicine now granted by several universities and other licensing bodies, as the English Conjoint Board, and certificates of attendance at special short courses of instruction issued by the London University. Of these, the former naturally covers the more comprehensive field of studies, but presents the disadvantage of requiring a period of attendance at suitable institutions, and implies, if it does not formally require, attendance at courses of special lectures, demonstrations, and practical work extending over several months. Such a course includes a study of the anatomy and physiology of the nervous system, of psychology and neurology, as well as of mental defects and disorders. For a diploma of this kind less could not reasonably be required, but the time involved is more than a medical officer in active work can spare, unless he lives within easy access and is able to secure free afternoons for the purpose. And this medical officers attached to the school medical service or the junior branches of the public health services are unable to do. In consequence they are bound to fall back on the short course.

Two such courses, consisting each of some eight lectures accompanied by demonstration of cases, explanations of forms and certificates, and visits to schools and institutions for the defective, have just been held by the University of London in conjunction with the Central Association for the Care of the Mentally Defective. These have been attended by nearly 150

medical officers, and have proved popular. From an educational standpoint a course confined to a week involves not only the strict limitation of the subject matter to mental deficiency but the assumption that the students are familiar with psychological and neurological methods. Experience unfortunately has shown that this expectation is not entirely justified, and it is evident that some extension is inevitable to allow of preliminary lectures or demonstrations. How to obtain the necessary leave of absence from duty for medical officers who wish to attend, bearing in mind that the strength of the staff gives little margin of elasticity, is a serious question. It may be this could be managed by holding the courses either immediately before or immediately after school holidays, so that part of them might come during the school vacation. A course devised to give some laboratory instruction, demonstrations of selected cases, opportunities for individual testing of cases by the students, followed by visits to schools or institutions to see these methods in actual practice, would have a high educational value, and it is to be hoped that the organisers of these classes will be able to make the necessary arrangements. At the same time it is desirable that a strong public opinion should support the demand of the medical officers for such post-graduate or revision courses, since at present study-leave is still difficult to obtain, whereas it should be an integral part of every appointment. A fortnight or three weeks' allowance for this purpose, or even more if required, would soon be repaid financially by reduction in the number of cases of backward children sent to special schools without the cause of their backwardness being ascertained and remedied, and by the effective education of some of those now deemed ineducable. To the community at large it is important that its really defective members should be either segregated or efficiently supervised to prevent them from spending much of their later life in gaols or Poor-law institutions—with intervals of predatory wanderings, or, what is worse still, from improvident marriages or illegitimate unions calculated to increase the numbers of the socially inefficient. Lengthening of the course beyond the week is essential if full use is to be made of the visits to schools and medical examinations, since without knowledge of the methods in use on the part of the student the time of the demonstrating medical officer is taken up in showing the nature of the tests he employs rather than in discussing the application of the results to the individual case. There is reason to think that, if a fortnight of continuous study were available, the same ground could be covered on the clinical side at least as in the courses for the diploma, though the necessary time for reflection and personal application would still be inferior. Any efforts to extend this educational provision are, of course, dependent on the willingness of local authorities to make it possible for their officers to attend and to sanction some disturbance of school routine.

WHITE SETTLEMENT OF THE AUSTRALIAN TROPICS.

OUR Australian correspondent gave some account in THE LANCET of Oct. 16th (p. 815) of the Australasian Medical Congress held at Brisbane towards the end of August last, noting that the principal subject for discussion was the question of the possibility of the permanent occupation of tropical Australia by a healthy indigenous white race and the conditions conducive or essential to such occupation. After a very full discussion the following resolution drafted by a subcommittee was adopted as the deliberate view of the Congress:—

After mature consideration of sources of information embodying the results of long and varied professional experience and observation in the Australian tropics, the Congress is unable to find anything pointing to the existence of inherent or insuperable obstacles in the way of the permanent occupation of tropical Australia by a healthy indigenous white race. It considers that the whole question of successful development and settlement of tropical Australia by white races is fundamentally a question of applied public health in the modern sense, such as has been demonstrated and practised with success amongst civil populations, under far more difficult conditions, by the American authorities in the Philippines prior to the Great War, and throughout the military forces of every allied Power during that war. It considers that the absence of semi-civilised coloured peoples in Northern Australia simplifies the problem very greatly. But it desires to emphasise in the strongest manner that any considerable extension of population and settlement under the existing loose conditions of sanitary administration and sanitary practice, using these terms in their modern wider sense, which prevail at the present time in tropical Australia, cannot hope for lasting success and cannot fail to result in ultimate disaster. The Congress recognises that a large amount of work still requires to be done in working out the practical details of any scheme of settlement, but it considers that it presents no difficulties beyond those of organisation, staff, time, and money. It realises that a great national question is involved, but it is unable to discern any obstacles which cannot be overcome by earnest and skilled application of the principles of statecraft.

To help in achieving this very desirable end the Congress resolved that the Australian Institute of Tropical Diseases should concern itself more directly with the problems of health in tropical Australia, that the Federal Government should be asked to appoint a special investigator for the collection of statistical data, and that some system should be organised for the dissemination of exact knowledge on the requirements, personal and communal, essential to healthy life in the tropics. Finally it was suggested that legislation should be introduced to deal with the extensive consumption of alcohol, the planning of towns and houses, the provision for recreation, the suitable hours for work in schools and factories, the provision for readily available periodical change from the coast to the hinterland, and the encouragement of industries specially suitable for tropical Australia. Australian medicine is clearly expressing its determination to make all parts of its vast area fit for white settlement.

BIOMETRICS AND THE PROCATARCTIC CAUSES OF TUBERCULOSIS.

IT is a highly satisfactory sign of the times that several recent publications on tuberculosis emphasise the importance of the procatarctic or predisposing causes of this disease as revealed by modern research. Latterly we have studied tuberculosis in terms of bacteriology rather than of biology, sociology, and heredity, and the half truth—no tuberculosis without the tubercle bacillus—has obscured our vision. For 40 years we have been peering down the microscope at little blobs of carbol-fuchsin with the docile and misguided concentration of a hen with its beak on a chalk line. It may be that in guinea-pigs and savages the tubercle bacillus behaves exactly as the bacteriologist would expect it to do, but in civilised communities we have yet to learn why, when two persons are equally exposed to infection with the tubercle bacillus, one is taken and the other left. We have yet to discover why the first-born are so comparatively susceptible to tuberculosis, and why the pure-bred Jew is comparatively immune. In Appendix V. to the first annual report of the chief medical officer to the Ministry of Health, Dr. M. Greenwood reviews the epidemiology of pulmonary tuberculosis and the work of Dr. J. Brownlee, Professor K. Pearson, Miss Hilda Woods, Dr. A. E. Tebb, Miss C. M. Thompson, Dr. Leonard Hill, and others.* The investigations of many of these workers are already so well known that they need not be summarised here, but, in passing, some of the curious and apparently contradictory findings of statistical analyses may be mentioned. Miss Thompson's coefficients, for example, show the paradox that in certain localities the worse the home conditions the lower the death-rate from phthisis in adolescents. But such a finding does not necessarily imply that bad housing is good for adolescents, but only that in the given instances it has been correlated with something else which is good for them. As Dr. Greenwood says: "Spending one's boyhood on the tail of a van ..... may be a very bad preparation for the economic future; but it may be a good thing for one's health as a boy ....." It is also interesting that, in certain occupations, the female death-rate from tuberculosis is highly correlated

with the death-rate from all other causes in women, but there is no such substantial correlation in men. Again, the male death-rate from tuberculosis is highly correlated with the index of overcrowding, the female death-rate is not so correlated. It is not so much the fault of the biometrician and his methods as of the lack of reliable data that the results of this line of investigation are often suggestive rather than final. But already they show that the ancient theories of innate and acquired predisposing factors were intrinsically sound. The oblivion which overtook these older theories was just, since in their development speculation and merely formal logic had too prominent a share. Referring to the problems of heredity in connexion with tuberculosis, Dr. Greenwood points out that the investigations of Pearson and his school have revealed the tendency to contract phthisis to be heritable in the same way and to the same extent as the determinants of stature or other bodily dimensions, and even of mental or moral characteristics. And it would be expected that "general health" would be heritable, the parents of more than average robustness begetting children of better quality thanparents of inferior physique. In providing quantitative verifications of theories dealing with heredity and evolution the English biometric school has been met with a certain amount of hostility, part of which, in Dr. Greenwood's opinion, is due to "a repugnance most feel to admit that any important element of national hygiene is either uncontrollable or only to be controlled by methods alien to the temper of a modern State." There is another explanation for this hostility: we do not like, and we certainly distrust, what we do not understand. Like every new science, that of biometrics has had to create a new vocabulary. To the biometrician the following lines may seem a gem of lucidity:—

> The reader is reminded that these are partial correlations—e.g., the correlation between the death-rate from tuberculosis and the percentage employed in factories in the table is not the value directly computed by the correlation of the two variables, but the residual value after allowance for the correlations of these two with the other variables, viz., percentage overcrowded and death-rate from other diseases.

But to some medical readers this passage will be a trifle, or more, obscure, and they may prefer the more tangible evidence of "something on a plate." We cannot, however, make great progress without statistics, and, as Dr. Lawrason Brown said in the course of his presidential address at the annual meeting of the American Climatological and Clinical Association this year, "All scientific experiments are statistical arguments in favour of, or in opposition to, certain inductions or deductions."

CROWN GALL AND CANCER.

IN the current (July) number of the *Journal of Cancer Research*, Messrs. Isaac Levin and Michael Levine communicate their observations on crown gall. In 1907 Dr. Erwin F. Smith showed that this tumour-like disease of plants could be produced artificially by an inoculation of a normal plant with a pure culture of a bacillus which he called *Bacterium tumefaciens*. In the present paper Messrs. Levin and Levine confirm his observations. But they differ widely from Dr. Smith as to the interpretation of these facts. Dr. Smith held that crown gall is practically identical biologically with animal and human cancer. And since crown gall is produced by a bacterium and various types of plant structures may be found in a crown gall, he concluded originally "that human cancer must be due to a parasite and that one parasite may well be the cause of the most diverse forms." But there are obvious differences in the structures and functions of animal and of plant tissues, and these differences must be taken into account in order to arrive at a correct understanding of the mechanism of the formation of crown galls. Animal tissues respond to injury by a protective mechanism—namely, the process of inflammation—which, if successful, is followed by a process of repair. In a plant, obviously, a process of inflammation cannot occur and protection is afforded by a new formation of cells, so that protection and repair are merged into one process. Now most crown galls, as a rule, do not invade and destroy the tissue in which they grow or affect in any way the general welfare of the plant. This type of crown gall is merely a protective benign cell proliferation. When small they correspond to a granuloma or scar. Larger crown galls are more analogous to a callus or to a cheloid in the human subject.

Occasionally, however, these crown galls develop true malignancy. They destroy the tissue in which they grow and even show metastasis formation, so that the whole plant is dwarfed or even destroyed. This condition is rare, but, according to Messrs. Levin and Levine, it is undoubtedly quite analogous to animal cancer. The conclusions at which Messrs. Levin and Levine arrive are best stated in their own words:—

> "When two plants of the same size, the same age, growing in the same soil under identical conditions of heat, light, moisture, and nutrition, are inoculated in the same regions with the same quantity of an identical culture of *Bacterium tumefaciens*, and there develops in one plant a small, benign, wart-like structure and in the other a large malignant tumour which may destroy the plant, it is difficult to conceive that the same micro-organism, and only the micro-organism, created the two conditions. The only possible explanation of the phenomenon lies in the fact that in the second plant, for some unknown reason, the cell proliferation, which began only as a protection against the bacterial invasion and apparently ceased when the bacteria were rendered harmless, suddenly received an impetus for limitless proliferation. It seems, then, that the first impetus to the cell proliferation and formation of a benign crown gall may be caused by the *Bacterium tumefaciens*. But the transformation of this protective or inflammatory benign cell proliferation into a malignant tumour is due, as in every type of animal and human cancer, to some mechanism within the organism of the host, independent of the micro-organisms, the nature of which is unknown."

It is noteworthy that this view is very similar to that recently expressed in our columns (Oct. 2nd) by Dr. Alexander Paine, whose conclusions were derived chiefly from a study of human mammary cancer. The phenomenon is also strikingly similar to the experimental production of cancer in animals, by subjecting susceptible cells to a process of chronic irritation such as painting with tar or feeding with spiroptera. Great credit is due to Dr. Smith for having initiated and persisted in the study of this condition in plants, even although the far-reaching generalisations which he drew originally from his observations cannot be accepted. In fact, his most recent paper entitled "Production of Tumours in the Absence of Parasites"[1] shows him to have reached by continued experimental observation very much the same position as outlined above, although he still adheres to the view that crown gall is analogous to all the types of human cancer. It is an unexpected ending—if it be the ending—to the controversy about the parasitic ætiology of cancer, if cancer, instead of being a parasitic disease, should be looked upon as an escape of the cell from the parasite.

VOCATIONAL GUIDANCE AND SELECTION.

AT the recent Conference of the Association for the Advancement of Education in Industry and Commerce, held at the University of London, South Kensington, a discussion upon the Use of Psychological Tests was opened by Dr. C. S. Myers. Dr. Myers pointed out that such tests were devised for two different purposes—for obtaining the right individual for a given work and for obtaining the right work for a given individual—and that they were applicable to work either of an educational or vocational character. A person might be advised on the basis of these tests to take up a vocation of a certain kind; this amounted to vocational guidance. Or a person might be chosen on the basis of these tests as best fitted for a vocation of a certain kind; this involved vocational selection. Dr. Myers indicated the two principles underlying the various kinds of vocational tests. Some tests were merely performance tests—e.g., tests of assembling, typewriting, &c. Others were established after analysing

[1] Archives of Dermatology and Syphilis, vol. ii., August, 1920, p. 176.

the work into its special psychological characters. For example, the work at a telephone exchange involved keenness of hearing, good powers of interpreting indistinctly heard words, memory for words and numbers, speed and accuracy of reaction. Tests could be devised to estimate such powers and the degree of success at them was first correlated with the degree of known efficiency at the vocation in question. According to the degree of such correlation, these tests were then discarded or weighted before being applied for vocational guidance and selection. Dr. Myers gave various illustrations of the proved value of psychological tests.

NARCOLEPSY.

AMONG the morbid states allied to that of encephalitis lethargica[1] is the condition first described by Gélineau in 1881 as "la narcolepsie," who considered it a neurosis characterised by an imperious desire to sleep, the slumber being usually of short duration. Later authors have used the term to include all states of paroxysmal sleep. "An attack of narcolepsy," says Professor Achard, "commences suddenly, seizing the patient in the middle of a meal or even while his brain is actively engaged in work. A doctor, under the care of Robin, fell asleep while walking. One of Féré's patients used to fall asleep while standing so soon as she leaned against a piece of furniture. Sometimes patients fall to the ground as a result of the sleeping attack. The muscles retain their tonus, though without contraction, the eyes are closed, sensitivity is greatly increased; ..... the attack may last from a few seconds to some hours and the patient is unaware on recovery of what has taken place during sleep." Nutritional disturbances play an important part in the pathogenesis of this condition. It is associated with such diseases of the liver as alcoholic cirrhosis and gall-stones. It bears some relation to hypothyroidism and renal disease. Hysterical narcolepsy is more akin to normal sleep and may persist for a much longer period. There is recorded the case of a woman of 25 who lived in Thenelles, a little village in the Aisne, and whose sleep persisted through several years.

MEDICINE AND THE BAR.

Sir Richard Atkin, in his Presidential address at the recent meeting of the Medico-Legal Society, dealt ably with the bringing together of the medical and legal professions in the administration of justice. He referred to medical jurisprudence as the large body of medical and surgical knowledge applicable to the elucidation of issues determined in courts of law, and commented on the frequency with which doctors are called upon to give evidence. It was painful, he said, to see a medical man sometimes defeated on his own ground by a member of another profession who happened to have a special and perhaps very recently acquired knowledge of the subject; similarly, it was distressing to see a young man, possibly entrusted with a brief for the first time, incapable of making his point against the defence of an expert medical witness. The tendency now was for medical evidence to become more and more prominent in the trial of certain issues; the effect of physical conditions upon conduct was more emphasised, and motives were expressed in terms of pathology. In criminal law offences against the person frequently necessitated medical evidence. The judge tended to regard the medical man not as an advocate of either side, but as an officer of justice there to help the court in the elucidation of truth. In the instance of murder, he said, it was only occasionally that doubt arose which could be solved by medical evidence, as only the motive of the crime was usually in question; but in almost any murder case the question of insanity might be put to a practitioner by the prisoner's counsel. With regard to charges of wounding, which were very numerous, the proof of intention of causing grievous bodily harm was largely dependent upon medical evidence; in this connexion, too, arose the vexed question of the state of mind induced by drunkenness, in which condition a large percentage of these crimes were committed. The most difficult class of cases in which medical men must appear were charges of rape and general sexual offences. The particular issue of virginity was known to be one of uncertainty, and great injustice might be inflicted either upon complainant or defendant; the medical witness should go no further than he could with complete satisfaction to himself. It would, Sir Richard Atkin considered, be in the interest of the practitioner for the court to have recourse in these cases to the services of its own surgeon—that there should be one man in the district, recognised as an authority in medical jurisprudence, who could relieve the private practitioner of this difficult task. Another important class of cases is that of abortion, a practice the public danger of which necessitates great care in the reporting of suspected instances. In the case of insanity the medical and legal views might be said to differ; a most important move would be the agreement of the professions as to some formula commending itself to both. The question which divided them—namely, that of criminal responsibility—had perhaps been considered too much in relation to murder alone. Other difficult cases requiring medical evidence were those of divorce, those arising under the Workmen's Compensation Acts, and those relating to all departments of public health—difficulties involving the skill of the lawyer equally with that of the doctor. In neither profession were sufficient pains taken to develop this relation between them. Sir Richard Atkin concluded with the suggestion that medical jurisprudence might be made a post-graduate subject for medical men.

[1] Les Rapports de l'Encéphalite Lethargique avec d'autres états Morbides, Professor Charles Achard, Paris Médical, Sept. 18th, 1920.

VULVAR DIPHTHERIA SIMULATING SOFT CHANCRE.

ALTHOUGH diphtheria of the vulva is relatively frequent in small children, usually secondary to faucial diphtheria, this localisation is extremely rare in adults. Dr. Ernst Kromayer,[1] of Berlin, reports a case in a woman, aged 22, who, in May, 1919, had contracted syphilis, for which she was treated with salvarsan and mercury. On admission to hospital in the following August symptoms of syphilis were no longer present, but there was a profuse yellow vulvar discharge and several ulcers round the urethral orifice and clitoris, which were regarded as chancroidal. In spite of cauterisation with carbolic acid, which was continued for ten weeks, the ulcers became more extensive, and when the patient was first seen by Dr. Kromayer on Nov. 5th their floor was covered with a thick white adherent membrane. Diphtheria bacilli were found in the smear and 3000 units of antitoxin were injected. Rapid improvement took place and within three weeks of the injection the ulceration had completely healed. Dr. Kromayer has been unable to find a similar case in the literature of vulvar diphtheria being mistaken for soft chancre.

SYSTEMATIC INSTRUCTION IN OTO-LARYNGOLOGY.

AN attempt on the part of the Surgeon-General to secure for the American Army a service in oto-laryngology, equal to that of the other subdepartments of medicine, apparently has disclosed a lack of proper special education on the part of those who claim to be specialists in this subject. Such a state of affairs was, very rightly, judged to be a serious matter, and a powerful committee, under the chairmanship of Dr. Gibb Wishart and representing the American Medical Association and all the American societies in connexion with the specialty, has taken the matter up and has issued a series of recommendations on the minimum curriculum to "be followed by those who shall hereafter seek to become recognised as specialists in oto-laryngology." No regular service in oto-laryngology was established in this country in connexion with the army, and we do not think that any widespread lack of proper special education would have been discovered among our specialists in these subjects if such a service had

[1] Dermatologische Wochenschrift, Sept. 18th, 1920.

been instituted. It is rarely that a specialist establishes a practice in this country without being attached to the staff of a hospital, where his attainments are carefully scrutinised, in competition with those of other candidates, before his election. The recommendations are, nevertheless, of considerable interest, and are admirable in their aims and scope.

The first is as follows: "The candidate must recognise that it is impossible to diagnose and treat a patient with an affection of the ear, nose, or throat, skilfully, without a sound knowledge of general medicine, and to that end should either have practised as a licensed practitioner, for four years, or have acted as an interne in a Class A general hospital for at least one year."

After this, the candidate must pursue a course of study, in the post-graduate department of a university, comprising: (*a*) anatomy of head, neck, and chest, embryology and histology, 100 hours; (*b*) pathology and bacteriology, 100 hours; (*c*) operations on the cadaver, 100 hours; (*d*) physics, 32 hours; (*e*) physiology, 30 hours; (*f*) neurology, 20 hours; (*g*) hygiene and public health, 10 hours; also reading of radiographic plates, knowledge of diseases of teeth and mouth, and general surgical technique.

These are to be considered from the viewpoint of the oto-laryngologist, and the committee hopes to secure a uniform course at the various universities.

These recommendations cannot be made compulsory, save where the committee proposes to arrange with the special hospitals and special departments to accept as residents only those who have taken the suggested courses of study. But in a further paragraph the committee states that it hopes to secure that the post-graduate departments of the universities will grant a qualification, degree, or diploma, to be conferred only upon such candidates as have followed the course laid down. If this plan is successful it will have the effect of inducing everyone who wishes to take up oto-laryngology seriously in America to go through the prescribed course of study, and the result will be studied with interest in this country, where a special qualification in these subjects has also been from time to time proposed. The facilities for clinical study are very great, and a uniform course of academic instruction is also doubtless desirable but is unlikely to be largely followed unless it were a step towards a special stamp. In this connexion we may direct attention to post-graduate courses in oto-rhino-laryngology being held in Paris at the Hôpital Saint-Joseph, under the direction of M. Georges Laurens. Besides attendance at the ordinary practice of the hospital, there will be given to the students two courses, an elementary course of nine lessons or demonstrations for general practitioners, and a full course of 26 lessons for those wishing to specialise. The former began on Nov. 1st, the latter begins on Nov. 15th.

THE next session of the General Medical Council will commence at 2 P.M. on Nov. 23rd, when the President, Sir Donald MacAlister, will give an address.

THE annual report of the Chief Medical Officer of the Board of Education has just been published and contains much valuable information on the school medical service, medical and dental inspection, with the treatment provided, as well as reports on special subjects of medical care—cripples, defectives, and children suffering from tuberculosis. There are also sections on the training of health visitors and midwives, physical education, and the relation between physical efficiency and juvenile employment; while the appendices include tabular lists of the school medical officers employed by each local education authority, and notes on the average school attendance for the period preceding the war, the number of children medically inspected last year, and a tabular statement for England and Wales showing the mortality at several ages from 1907 to 1919 from all causes and from tuberculous disease. Not the least important part of the Report is the section showing what is being done to meet the need for imparting to children a knowledge of the laws of a healthy life, for, as Sir George Newman points out, "it is certain that neglect, ignorance, and inattention to the laws of hygiene in childhood loom large in the sum total of disability."

FEDERATION OF MEDICAL AND ALLIED SOCIETIES.

DISCUSSION ON THE MINISTRY OF HEALTH (MISCELLANEOUS PROVISIONS) BILL, CLAUSE 11.

A CONFERENCE, convened by the Federation of Medical and Allied Societies, was held in the Council Room of the Medical Society of London, 11, Chandos-street, Cavendish-square, W., on Nov. 5th, Sir MALCOLM MORRIS presiding.

The CHAIRMAN, in opening the proceedings, said that the Conference was composed of representatives of societies concerned with the health of the country, and it had been convened to consider Clause 11 of the Ministry of Health (Miscellaneous Provisions) Bill now before Parliament. If the clause were passed in its present form the Bill would be a most important departure, but the Minister of Health had not consulted the medical and allied professions of the country before presenting the Bill containing it. The clause would tend to stop voluntary contributions to hospitals and place upon the country an intolerable burden of increased rates.

Among those present were:—

Sir Henry Craik, M.P.; Captain W. E. Elliot, M.P.; Lieutenant-Colonel F. E. Fremantle, M.P.; Major J. E. Molson, M.P.; Lieutenant-Colonel Nathan Raw, M.P. (Medical Committee of the House of Commons); Lord Knutsford; Miss E. C. Barton (Poor-law Infirmary Matrons' Association); Dr. J. F. Gordon Dill, Dr. W. Pasteur, and Sir John MacAlister (Royal Society of Medicine); Dame Sidney Browne, Mrs. Cecil Carter, and Miss M. S. Rundle (College of Nursing, Limited); Dr. E. H. Stancomb and Dr. A. A. MacKeith (Southampton Medical Parliamentary Committee); Dr. A. Welply (Editor, *Medical World*); Dr. Dawson Williams (Editor, *British Medical Journal*); Dr. Squire Sprigge (Editor, *The Lancet*); Dr. R. McNair Wilson, Mr. Chapman (*Pharmaceutical Journal*); Miss Collum (*College of Nursing Bulletin*); Dr. C. M. Wilson; Dr. Charles Buttar; Mr. Herbert Paterson (Royal British Nurses' Association); Colonel Sir John Young (Central London Throat, Nose, and Ear Hospital); Miss A. M. Peterkin and Miss E. Richmond (Queen Victoria's Jubilee Institute for Nurses); Mr. Sidney Spokes (London and Counties Medical Protection Society); Miss D. McWilliam (Welfare Workers' Institute); Dr. Arthur Latham; Miss A. Dowbiggin and Miss M. L. Rimmer (National Union of Trained Nurses); Mr. A. Melhuish (Pharmaceutical Society); Mr. Franck Pearce and Mr. C. F. Rilot (British Dental Association); Mr. Neville Chamberlain, M.P., and Mr. Walter Kewley (British Hospitals' Association); Miss Rosalind Paget and Miss M. Eaton (Incorporated Midwives' Institute); Sir Thomas Horder; Mr. Grant Ramsay (Institute of Hygiene); Dr. R. H. Cole (Medico-Psychological Association of Great Britain and Ireland); Dr. Howard Marshall; Sir Ronald Ross (British Science Guild); Dr. Muir, Dr. C. T. Parsons, and Dr. H. W. Bruce (Infirmary Medical Superintendents' Society); Dr. J. Ford Anderson; Mr. J. P. Lockhart-Mummery; Dr. G. B. Batten (Sydenham District Medical Society); Mr. Ernest Clark; Mr. Vivian Greenyer (National Medical Union); Miss Louisa Aldrich-Blake (Medical Women's Federation); Dr. Alex. Blackhall-Morison (North London Medical and Chirurgical Society).

The clause of the Bill under discussion reads as follows:—

Ministry of Health (Miscellaneous Provisions) Bill, 1920 (Clause 11).—(1) The council of a county shall have power (*a*) to supply and maintain hospitals (including out-patient departments) for the treatment of illnesses and diseases generally, or for the treatment of any particular illness or disease, or any particular class of illnesses or diseases; (*b*) to contribute, on such terms and conditions as may be approved by the Minister, to any voluntary hospitals or similar institutions within their area; and (*c*) to undertake the maintenance of any Poor-law hospitals or infirmaries within their area.

Dr. ARTHUR LATHAM moved the first resolution:—

This Conference of representatives of medical and allied organisations, whilst desirous of assisting the Minister of Health in his efforts to increase the efficiency of the health services of the country, regrets that it has been found necessary to introduce health legislation involving important principles in a Miscellaneous Provisions Bill.

He said that when the Ministry of Health was initiated it was hoped that a new era with regard to the cure and prevention of disease was inaugurated in the country. It was recognised that the Minister of Health was confronted with difficult problems and would require time to put out a well-considered scheme both

from the point of view of prevention and of cure. It was hoped that in time a scheme of this kind would be placed before the medical profession and allied bodies, and it was disappointing to find such an important matter as the hospital accommodation of the country inserted in a clause of a miscellaneous measure.

Dr. STANCOMB seconded, remarking that if the particular form of legislation under consideration came into effect the medical profession would shortly find itself face to face with various accomplished systems of medical service which would in all probability be found to be in distinct contradiction to the Interim Report of the Medical Consultative Council (the Dawson Report), and certainly, as far as the area which he represented was concerned, in complete opposition to practitioners.

Captain ELLIOT deplored the lack of active interest on the part of the medical profession in bringing before Members of Parliament, professional as well as lay, considered opinions upon health measures. The Minister of Health was not entirely at fault if undesirable measures were passed, for, as a country got the Government it deserved, the medical profession would get the treatment it demanded.

Colonel FREMANTLE deprecated any attack on the Minister of Health, the measure having been introduced to meet urgent needs.

Sir HENRY CRAIK, while not assigning responsibility to anyone, thought that it was extremely regrettable that such a Bill should be introduced, involving as it did important principles of a totally heterogeneous character, which ought to be dealt with in as many separate measures.

Dr. R. MCNAIR WILSON claimed to know to some extent what the public thought, and he asserted that it was extremely interested in matters of health. The House of Commons was not in touch with the opinion of the public, which showed that when an appeal for hospitals was made even the poorest of the population wished to support the voluntary principle.

Dr. R. H. COLE also supported the resolution, alluding to Clause 10 in the Bill as requiring amendment for medical reasons. The resolution, on being put to the meeting, was carried.

Sir THOMAS HORDER proposed that—

> This Conference of representatives of medical and allied organisations considers that the interests of the public in matters of health legislation can be safeguarded if the Minister of Health avails himself of the means now offered of consulting collectively the medical, dental, pharmaceutical, nursing, and midwives professions, and others concerned with the national health, as the members of these professions not only provide the health services, but are looked to by the public for guidance in such matters.

The Minister of Health, he said, neither alone nor with the help of his bureau, could get a proper estimate as to the views and needs of the medical profession. The principle of the resolution had been conceded by the Minister of Health himself, both in public and in private, and Dr. Addison had emphasised the fact that, in the ultimate, he was dependent upon the general opinion of the medical profession for successful health legislation. Quoting the late Lord Rhondda, who had been keenly interested in public health matters and who before his death regretted that he could never be the Minister for Health, Sir Thomas Horder said that Lord Rhondda fully realised that for successful health legislation he would want "the machinery whereby I might adopt the opinion of the profession, and this machinery should not be part of the bureau." The Consultative Council, continued Sir Thomas Horder, was part of the bureau, and this had been admitted by Dr. Addison himself. The means of consulting the medical profession already existed in the Federation of Medical and Allied Societies, but as to the efficiency of that body he must not speak.

Captain ELLIOT believed that though individually the profession had means of expressing its opinion, it had no means of doing so collectively *before* measures affecting health came into effect.

Mr. LOCKHART-MUMMERY, in seconding the resolution, said that after all the voluntary hospitals of the country had been in the main founded by the medical profession, though it had not found all the money.

Dr. STANCOMB agreed that the community were interested in matters of health, but community of medical interest was lacking. By bringing in a Bill which was not an ad hoc measure it was quite possible that the Minister of Health would receive advice from various sources of clashing interests.

Sir HENRY CRAIK proposed an amendment, which was seconded by Captain ELLIOT, making the resolution read as follows:—

> This Conference of representatives of medical and allied organisations considers that the interests of the public in questions of health legislation demand that the Minister should avail himself of the means now offered of consulting collectively the medical, dental, pharmaceutical, nursing and midwives professions, and others concerned with the national health, inasmuch as the members of these professions not only provide the health services but are looked to by the public for guidance in such matters.

This was carried.

Dr. BUTTAR proposed that—

> This Conference of representatives of medical and allied organisations suggests that, as the British voluntary hospital system has been proved to be the most efficient and economical means of providing institutional treatment, and one which stands as a pattern for the world, it would be a mistake to establish municipal general hospitals until the system of patients' contributing towards the expense of their maintenance in voluntary hospitals and the attempts which are now being made to link up voluntary hospitals with Poor-law infirmaries have been given a fair trial.

He said that in the debate in the House of Commons on Thursday night much in the Bill had been modified, but the position as it existed at Bradford had not been ruled out, and if extended all over the country would be extremely bad for the voluntary system. At the present time there were two tendencies of thought; on the one side there was a reaction against what was called charity by those who thought that hospital treatment should be given as a right—that was one of the things that had led to the Bradford Municipal Hospital; and on the other hand there was a demand for the restriction of nationalisation, in which he included the municipalisation of hospitals. As far as hospitals were concerned, the argument for municipalisation had been largely condemned by the work of Sir Napier Burnett, who asserted that to run a State or municipal hospital, on the lines of the present voluntary hospitals, would cost at least one-third as much more. If that statement were true it was obvious that such expensive experiments should not be made. As regards the objection that voluntary hospitals made the patients the objects of charity, the system which was being tried in London and elsewhere of payments by patients could be adopted with success. The linking up of Poor-law Infirmaries to voluntary hospitals was already in existence at St. Mary's Hospital, which had joined with Paddington Infirmary, and a similar experiment was about to be tried by other hospitals. This was an alternative to municipalisation. He would like to see the experiments which he had mentioned fairly tried before any new ventures were embarked upon.

Mr. NEVILLE CHAMBERLAIN seconded the resolution.

Colonel FREMANTLE said the basis for the proposals of the Minister of Health was the critical position of voluntary hospitals, and his primary object was to save the voluntary principle. He (Colonel Fremantle) suggested that any municipal or State contribution should be limited to grants per capita for those persons unable or only partially able to meet the payment of their maintenance and treatment at a general hospital. That would be a contribution on a definite basis, and apply only to those who could not afford to pay for full maintenance and treatment. Only by having things on a definite and proper basis could State aid be obtained.

Colonel Sir JOHN YOUNG said that it was necessary to proceed with great prudence and care in examining the voluntary system. He expressed his belief that a system of voluntary contributions from patients who could afford them would remove the sentimental objection to charity, adding that such a system was working well at the Central London Throat, Nose, and Ear Hospital.

Lord KNUTSFORD said he believed that the voluntary system had come to an end. He declared that on Jan. 1st the London Hospital would not be able to

afford to pay its bills, and the institution would be closed unless help arrived. His time, he said, was taken up in trying to devise a scheme which would enable the voluntary hospitals to go on, and also to provide proper aid for the health of London. He believed the reason that they could not go on at the London Hospital was not because subscriptions had fallen off, not because the "new rich" did not subscribe, but because of the present enormous cost of everything, and it was quite impossible to get £300,000 a year where they at present got £200,000. Voluntary hospitals had done good work, but they had failed to meet the needs of the health of London. There were 800 people waiting to get in, and the hospital was cramped in every direction. They could not carry on research; they could not meet the requirements of doctors. The voluntary system had done its best, but its day was over. He proposed as an ideal scheme that the London County Council should make itself the health authority for the whole of London, and that it should have outlying hospitals and central hospitals. All the great teaching centres would remain as consultative hospitals. Poor-law infirmaries should be municipal hospitals, with really good resident staffs, and these would be the outlying hospitals in his scheme. At the central hospitals should be the schools, and cases which the outlying hospitals would not be able to attend to should be sent to them. The London County Council would be able to maintain the voluntary subscriptions, as well as to keep up the outlying hospitals out of the rates. A lot of people connected with voluntary hospitals loved them for the work they were doing, and would always go on helping and contributing to them to carry on any work of research. He did not think that municipal aid would put an end to the voluntary system. It was a mistake, he asserted, to suppose that the voluntary hospitals were meeting the wants of London to-day—the amount of State aid already received proved that. He urged that more citizens should help in the work and that efforts should not be confined to the big hospitals, closing with the statement that "the way the panel system is worked is a perfect disgrace."

Dr. H. W. BRUCE, representing the Society of Infirmary and Medical Superintendents, said that at the present moment there were not in England sufficient hospital beds for the real needs of the population, more particularly for lying-in women, and those extra beds could not be provided by voluntary hospitals. In order to provide the beds which the population needed there must be additional hospitals, and it must not be thought that any process of linking up voluntary hospitals with Poor-law institutions would provide a single one of the extra beds that the country required. These institutions had been described as half empty, but the Government census was taken in the summer; had it been taken in the winter they would have been found full.

Dr. GORDON DILL defended the voluntary system, and thought Lord Knutsford was speaking for London rather than the provinces. He gave the figures showing how the deficit at the West Sussex Hospital could be paid off by a system of payment for bare maintenance by the patients who could afford it.

After a long discussion, in which many speakers took part, Colonel Fremantle's suggestion with regard to per capita payments was put as an amendment, but afterwards withdrawn, and a resolution was finally adopted in the following form:—

> This Conference of Representatives of Medical and Allied Organisations suggests that the time has now come when the British voluntary hospitals system should be supplemented by State aid, but that the system of patients' contributions towards the expenses of their maintenance in voluntary hospitals and the attempts which are now being made to link up voluntary hospitals with Poor-law infirmaries should be given a fair trial.

This resolution represents the original motion as altered by an amendment proposed by Sir THOMAS HORDER and seconded by Sir RONALD ROSS, and a further amendment proposed by Mr. NEVILLE CHAMBERLAIN and seconded by Dr. BATTEN. It was carried with acclamation.

On the motion of Mrs. CECIL CARTER, seconded by Dr. R. D. BATTEN, the following resolution was carried, and the Conference terminated.

> This Conference of Representatives of Medical and Allied Organisations considers that in the event of the establishment of municipal hospitals it is in the public interest that the local medical practitioners, dental surgeons, pharmacists, nurses, and midwives should have a clearly defined representation in connexion with all local health authorities or such bodies as are responsible for the administration of local hospitals and Poor-law institutions.

The meeting was well attended and the speeches business-like, and the Federation may be congratulated on having provided an opportunity for a valuable open discussion. Communications arising out of the discussion or otherwise should be addressed to Dr. Howard Mummery, Secretary of the Federation of Medical and Allied Societies, 5, Vere-street, Cavendish-square, London, W.

MEDICINE AND THE LAW.

Opium Smoking and the Law.

THE reports in the newspapers of proceedings taken by the police against persons, usually Chinamen, in the neighbourhood of the London docks, have given many persons the impression that "keeping an opium den" is a class of offence punishable as such, like keeping a disorderly house or a gaming house. In this they have been wrong. It has been realised that opium smoking is a pernicious habit dangerous to the health of those who indulge in it to excess, and that it leads, directly or indirectly, to the commission of crimes and offences; and efforts to deal with it or to minimise the evil, if not to end it, have been made by the police. In the absence, however, of any legal power to deal directly with the "den" as such, it has been necessary to follow up the "raid," which we have read of in the police reports, with prosecutions either for dealing with a poisonous drug in contravention of the law regarding the sale of poisons, or for keeping a gambling house. Opium and gambling are so closely associated in the districts in seaports frequented by Chinese that the latter has often formed the subject of the proceedings eventually taken, where proof of dealing in the drug without observing the necessary formalities has been unobtainable. This awkward method of checking a practice dangerous to health, and leading to and connected with vice and crime, will now be superseded by proceedings under Part II. of the Dangerous Drugs Act, 1920. This is an Act dealing specially with opium in the various forms in which it is a source of danger to the vicious and self-indulgent. Part II. is particularly concerned with "prepared opium," defined as meaning opium prepared for smoking, and as including dross and any other residues remaining after opium has been smoked. Section 4 makes it unlawful to import or export prepared opium. The effect of Section 5 is to render it an offence against the Act for any person (*a*) to manufacture or deal in prepared opium; (*b*) to possess it; (*c*) to be the occupier of any premises and permit them to be used for preparing opium for smoking, or for selling or smoking it; (*d*) to be concerned in managing any premises used for such purposes; (*e*) to have in his possession any pipes or utensils for use in opium smoking or in preparing opium for smoking; (*f*) to smoke or otherwise use prepared opium, or to frequent any place used for the purpose of opium smoking. This seems comprehensive enough, and it need only be added that the powers given to the police to enforce the Act by search and arrest are considerable and the penalties are heavy. Any constable may arrest without warrant any person who has committed, or attempted, an offence against the Act, or is reasonably suspected of having done so, if there are grounds for believing that that person will otherwise abscond or if his name and address cannot be ascertained. An offender against the Act is liable on summary conviction to a fine up to £200 or to imprisonment, with or without hard labour for six months, or to both, subsequent convictions involving even heavier punishment. No doubt these heavy penalties are included with a special view to the traffic in cocaine, dealt with in another part of the Act.

Venereal Disease and Professional Secrecy.

The question of the privacy of venereal clinics came up in the Divorce Court early in the present year (see THE LANCET, 1920, i., 163, 171). Dr. F. J. H. Coutts deals with it, and with this case in particular, in a section of the first annual medical report of the Ministry of Health. The Venereal Diseases Regulations, he writes, cannot override the general law which requires a witness in a court of justice to answer all such questions as the judge may hold to be relevant to the issue before the court. Sir George Newman's letter dealing with the question may usefully be given here in full:—

Ministry of Health, Whitehall, S.W. 1.
31st March, 1920.

The attention of the Ministry of Health has been called to a recent case in the Divorce Court (Garner *v.* Garner, reported in the *Times* of January 14th, 1920), in which the question was raised as to the obligation of a doctor to give evidence of facts which have come to his knowledge while attending a patient at a venereal diseases clinic.

It seems clear from comments which have appeared in the press that some misapprehension exists as to the exact scope of the learned judge's ruling in the case. The report of the case shows that it was at the patient's own instance, and on her behalf, that the doctor who had attended her was called to give evidence as to her state of health. The doctor having drawn the attention of the judge to the Article in the Venereal Diseases Regulations which requires all information acquired by a doctor in the course of his duties at a venereal diseases clinic to be regarded as strictly confidential, the learned judge ruled that the witness was nevertheless bound in law to answer the questions put to him.

The case was not therefore one in which any question of violation of professional confidence arose. With regard, however, to the Venereal Diseases Regulations themselves, the Ministry are advised that the obligation which they impose on the doctor is an obligation not to disclose to third parties any facts which his examination of the patient may bring to light. This in effect re-states the well-known rule of the medical profession, and adds a legal sanction to it. But, so far as the Ministry are aware, a disclosure at the express request of the patient and in the patient's own interest would not be contrary to any principle of medical ethics, and the Ministry are advised that no different interpretation should in this respect be placed upon the regulations. Cases will readily occur to every doctor in which it may almost be said to be the moral or social duty of the doctor to comply with such a request. In a case such as that above referred to, for example, it is easy to see how a refusal on the part of a doctor to give the evidence necessary to establish his patient's case might even involve a denial of justice to the patient.

It is, however, necessary to add that the Venereal Diseases Regulations do not purport to, and indeed could not (as the learned judge's ruling shows), override the general law which requires a witness in a court of justice to answer all such questions as the judge may hold to be relevant to the issue before the court. The Ministry understand that, strictly speaking, the legal profession alone are entitled to claim a professional privilege in this respect, and it may be that cases will arise in the future in which a doctor, subpœnaed at the instance of the other party to the litigation as a witness of facts relating to a patient, cannot give evidence without violating the rule of professional confidence.

Sir George Newman concludes: "If in these circumstances the doctor finds himself involved in a conflict of duties, it appears to the Ministry that he may properly appeal to the court for protection, and they are confident that to any such appeal the court would, so far as the law permits, give full and sympathetic consideration."

Birmingham and Mental Inefficients.

In February, 1919, there was initiated at Birmingham a scheme whereby the justices should avail themselves of the services of Dr. W. A. Potts in dealing with persons suspected of mental inefficiency brought before them. This was effected by arrangement with the Watch Committee, and in the following September the Prison Commissioners appointed Dr. M. Hamblin Smith, of Portland prison, as resident medical officer at the Birmingham prison, for the express purpose of assisting the justices in cases remanded or committed to prison. Structural alterations at the prison have since been made to enable accused persons, committed or remanded for observation or treatment under the new scheme, to be kept apart from the other inmates. A report of the General Purposes Committee has now been presented to a meeting of the justices at Birmingham which speaks of the valuable assistance afforded by Dr. Hamblin Smith in giving evidence in cases in which, before the scheme, the attendance of the prison medical officer would not have been thought necessary. It also expresses satisfaction with the results obtained during the year for which the experiment has been tried. The report contains the records of 39 cases, the majority of which were examined by Dr. Potts, a few, remanded to prison, having also been under the care of Dr. Hamblin Smith. Reports on the working of the scheme by the two gentlemen named are appended. Although the number of cases dealt with has necessarily been small, examination of the table mentioned shows that, even in the short time that has elapsed since the cases referred to were before the justices, satisfactory results have already been achieved in many instances. In several, naturally, the latest information is to the effect that the defendant is still in the industrial school or other institution to which he has been sent. In future tables of this kind space will no doubt be found for the date on which the magistrates dealt with each case, which will render the degree of success attained easier to gauge. Dr. Potts, in his report, calls attention to the examples of mental defectives which his examinations have revealed and which had before escaped detection as such. He also dwells upon the particular attention which should be accorded to children and young persons. He is greatly impressed with the early age at which the criminal propensities of children before the court have really begun, without having been noticed or dealt with, and he refers with approval to the conclusion of American investigators that in a large proportion of charges in children's courts there should be a thorough medical and psychological examination. Dr. Hamblin Smith's report contains valuable suggestions for improvement in the law relating to mental deficiency, and generally as to the treatment that should be meted out to the convicted prisoner. Treatment of the criminal, having regard to the act committed as a symptom and not as supplying the measure of a punitive sentence, may be said to summarise the recommendations that he makes. The City of Birmingham may certainly be congratulated upon an experiment which should bear considerable fruit in the future. The coöperation of the Prisons Commissioners shows that the matter is being watched with interest by the authority most intimately concerned and best able to further its development. A note by Dr. Potts states definitely that the examination and thorough investigation conducted by him has been resented by no one concerned, and has often been welcomed by relatives. In no case, moreover, has he found examination superfluous, an indication that a larger proportion might be referred to him with advantage. The time required for measures of inquiry is one of the difficulties, as it involves a larger number of workers than more perfunctory methods demand. There is also the question of expense, to be saved, as Dr. Hamblin Smith points out, in the long run by the eventual diminution of crimes to be inquired into. Here we have an example of preventive measures, as distinct from treatment when the disease has broken out.

SMALL-POX OUTBREAK AT MIDDLETON.—There have been 60 cases recorded up to Nov. 3rd, 20 males and 40 females, but so far there have been no deaths. Dr. Trimble, at the Lancashire County Council meeting on Nov. 5th, said it was well known that only some 50 per cent. of the public were protected by vaccination, whereas only vaccination and revaccination could prevent small-pox. A full report on the outbreak is promised.

THE LATE DR. CHARLES HEMMING.—Retiring from practice over 20 years ago, Dr. Hemming has since lived at Ovingdean, near Brighton. He died at Hove on Nov. 3rd at a great age. A Middlesex Hospital student, he took the L.S.A. diploma in 1853 and became M.R.C.S. Eng. in the same year, proceeding to the M.D. degree at St. Andrews three years later. He practised at Abingdon, Berkshire, and was for some time coroner for the borough of Abingdon. In Brighton and Hove he was well known in chess circles. He was twice married and his son is now in practice in Brighton.

Public Health.

SCHOOL MEDICAL SERVICE.

Colchester.

AT Colchester the average number of children on the school registers in 1919 was 6315, with an attendance ratio of 89·4 per cent.; the number medically examined in the routine inspections was 2208, the group of "leavers" being very numerous (1212), on account of the routine examinations having been in abeyance during 1917 and 1918. A special inquiry was made as to the effect of child labour during the war. It was found that 420 children were employed before or after school hours, and that 141 employers were infringing the Employment of Children By-laws of 1913, the worst cases being those of errand boys and boys delivering newspapers. Steps were taken to bring these by-laws to the public notice, and employers were warned. There can be little doubt that benefit will result to the children, and that school teachers and health officers will welcome the reduction of the hours of work allowed, especially before attending school in the morning. Dr. W. H. Corfield, the medical officer of health and school medical officer, mentions in his report that, owing to the year's work having to be completed in six months, only routine cases (that is, children in the code groups) were examined in the schools, all "specials" being sent to the Treatment Clinic. Dr. R. H. Vercoe, the assistant school medical officer, draws attention to a large school recently erected (Canterbury-road Infants) in which all the classrooms, with one exception, face due north, and remarks with justice that "this appears to be an extremely unfortunate design." With the many years' experience in school-planning and construction now available it is difficult to understand how such an arrangement can have been either designed or approved. Dr. Vercoe also gives some interesting details as to children with heart disease. Of 20 such cases 8 had suffered from rheumatic fever or rheumatism, 3 from diphtheria, and 2 from scarlet fever; 1 girl had had five attacks of rheumatic fever, with marked dilatation and mitral disease. She "showed some dyspnœa after severe exercise; she was stopped from drill and the parents given general advice." Unless such cases as these are definitely placed under regular medical care and supervision there will always be risk of serious and even fatal consequences, the effect of which (if happening in school) may be deplorable.

Dr. Vercoe contributes a very useful appendix on *Pediculosis capitis* in school children, based on extensive observation. As to causation, with reference to the relative importance of school contact, as compared with parental negligence, he shows that the latter is the more important factor. Immediately after the summer holidays of five weeks two schools were examined (girls only): in one of these, out of 92 girls 45 per cent., in the other 27 per cent. out of 293 girls, were found to be badly infested. In the first school all of the badly infested children (42) were excluded; in the second and larger school it was found inadvisable to exclude all of these (81); therefore the committee decided that 16 only should be excluded; but the school nurse visited the homes of all affected and instructed the parents as to treatment. The result was that all the excluded children in both schools (58) were clean enough to be readmitted within periods ranging from three days to four weeks; while of the 65 children not excluded, none were really clean at the end of the period, and in 67 per cent. there was no improvement. Parental negligence is certainly an important factor, but there may be extenuating circumstances. Dr. Vercoe considers in detail the various methods of treatment for this condition. Warm vinegar, as commonly recommended, he has not found to be satisfactory; kerosene is dangerous. Actual lice can be got rid of by the usual methods without difficulty; for removal of nits solutions of 20 per cent. acetic acid, 5 per cent. potash, and 10 per cent. hydrochloric acid were compared. Cold solutions had no effect whatever; with hot solutions nits could be easily drawn off the hairs. Hot vinegar (not warm) is recommended, "as hot as can be borne by the scalp." The main recommendation is "exclusion from school at the beginning of term, together with clear printed instructions, and prosecution of those who have no extenuating circumstances and are not clean within two weeks, appears to be the best course."

URBAN VITAL STATISTICS.

(Week ended Nov. 6th, 1920.)

English and Welsh Towns.—In the 96 English and Welsh towns, with an aggregate civil population estimated at nearly 18 million persons, the annual rate of mortality, which had been 10·7, 10·9, and 11·7 in the three preceding weeks, further rose to 11·8 per 1000. In London, with a population of nearly 4½ million persons, the annual death-rate was 11·7, against 11·8 per 1000 in the previous week, while among the remaining towns the rates ranged from 3·8 in Rotherham, 4·3 in Smethwick, and 5·5 in Tottenham, to 18·6 in West Bromwich, 23·4 in South Shields, and 24·1 in Stockton-on-Tees. The principal epidemic diseases caused 245 deaths, which corresponded to an annual rate of 0·7 per 1000, and comprised 129 from infantile diarrhœa, 69 from diphtheria, 15 from scarlet fever, 14 each from measles and whooping-cough, and 4 from enteric fever. The deaths from diarrhœa, which had been 207, 193, and 185 in the three preceding weeks, further fell to 129, and included 26 in London, 13 in Sheffield, 10 in Liverpool, 8 in Manchester, and 7 in Birmingham. The mortality from the remaining diseases showed no marked excess in any of the large towns. There were 5374 cases of scarlet fever and 2353 of diphtheria under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, against 5167 and 2301 respectively at the end of the previous week. The causes of 26 of the 4046 deaths in the 96 towns were uncertified, of which 5 were registered in Tynemouth, 4 in Birmingham, and 3 in Liverpool.

Scottish Towns.—In the 16 largest Scottish towns, with an aggregate population estimated at nearly 2½ million persons, the annual rate of mortality, which had been 11·5, 12·1, and 13·9 in the three preceding weeks, further rose to 14·7 per 1000. The 348 deaths in Glasgow corresponded to an annual rate of 16·3 per 1000, and included 11 from infantile diarrhœa, 3 each from measles, scarlet fever, and diphtheria, and 2 each from enteric fever and small-pox. The 89 deaths in Edinburgh were equal to a rate of 13·6 per 1000, and included 2 from diphtheria and 1 each from enteric fever, measles, and infantile diarrhœa.

Irish Towns.—The 117 deaths in Dublin corresponded to an annual rate of 14·7, or 0·8 per 1000 above that recorded in the previous week, and included 4 from infantile diarrhœa, 2 each from whooping-cough and diphtheria, and 1 from enteric fever. The 100 deaths in Belfast were equal to a rate of 12·6 per 1000, and included 4 from infantile diarrhœa, and 2 each from scarlet fever and diphtheria.

VITAL STATISTICS OF LONDON DURING OCTOBER, 1920.

IN the accompanying table will be found summarised statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the ten diseases notified in the table was equal to an annual rate of 16·3 per 1000 of the population, estimated at 4,358,309 persons; in the three preceding months the rates had been 6·5, 6·6, and 11·3 per 1000. Among the metropolitan boroughs the lowest rates from these diseases were recorded in Kensington, Chelsea, the City of Westminster, Hampstead, Stoke Newington, and Lewisham; and the highest in Bethnal Green, Stepney, Poplar, and Bermondsey. Scarlet fever showed a marked increase in prevalence—50 per cent.—over the already high number of the preceding month; this disease was proportionally most prevalent in Bethnal Green, Stepney, Poplar, and Bermondsey. The Metropolitan Asylums Hospitals contained 5117 scarlet fever patients at the end of the month, against 1940, 2251, and 3683 at the end of the three preceding months; the weekly admissions averaged 873, against 284, 335, and 603 in the three preceding months. Diphtheria also showed a considerable increase in prevalence—25 per cent.—over the month of September; the greatest proportional prevalence of this disease was recorded in Paddington, Islington, Hackney, Holborn, Poplar, and Battersea. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals, which had been 1470, 1388, and 1775 at the end

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING OCTOBER, 1920.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated civil population, 1919.	Notified Cases of Infectious Disease.											Deaths from Principal Infectious Diseases.								Deaths from all causes.	Death-rate per 1000 living.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.		
LONDON	4,358,309	—	3700	1449	—	25	1	31	225	9	9	5449	16·3	—	6	14	63	12	3	155	253	0·8	3523	10·5
West Districts:																								
Paddington	143,938	—	87	70	—	1	—	2	7	—	1	168	15·2	—	—	—	1	—	—	7	8	0·7	121	11·0
Kensington	157,886	—	88	29	—	1	1	1	6	—	1	127	10·5	—	—	—	—	—	—	7	7	0·6	124	10·2
Hammersmith ...	130,981	—	146	50	—	—	—	1	2	—	1	200	19·9	—	1	1	1	—	—	3	6	0·6	103	10·3
Fulham	152,543	—	147	63	—	—	—	3	8	—	1	222	19·0	—	—	—	2	—	—	8	10	0·9	117	10·0
Chelsea	60,573	—	19	24	—	—	—	—	1	—	—	44	9·5	—	—	—	—	—	—	1	1	0·2	40	8·6
CityofWestminst'r	127,533	—	38	17	—	—	—	1	5	—	—	61	6·2	—	—	1	1	—	—	3	5	0·5	103	10·5
North Districts:																								
St. Marylebone ...	97,953	—	80	10	—	1	—	—	5	—	2	98	13·0	—	—	†1	1	—	—	2	4	0·5	98	13·0
Hampstead	88,012	—	37	18	—	3	—	—	3	—	—	61	9·0	—	—	—	1	—	—	—	1	0·1	56	8·3
St. Pancras	219,434	—	127	72	—	3	—	—	8	—	—	210	12·5	—	—	1	1	—	—	8	10	0·6	176	10·5
Islington	323,034	—	225	181	—	4	—	1	12	1	—	424	17·1	—	—	2	14	1	1	11	29	1·2	248	10·0
Stoke Newington...	50,954	—	20	19	—	—	—	—	1	—	1	41	10·5	—	—	1	—	—	—	1	2	0·5	44	11·3
Hackney	216,736	—	178	119	—	—	—	—	20	1	—	318	19·1	—	—	1	3	1	—	11	16	1·0	164	9·9
Central Districts:																								
Holborn	38,156	—	19	19	—	—	—	—	1	—	—	39	13·3	—	—	—	1	—	—	2	3	1·0	55	18·8
Finsbury...	75,291	—	77	14	—	—	—	1	9	—	—	101	17·5	—	1	1	1	—	—	1	4	0·7	63	10·9
City of London ...	13,893	—	10	6	—	—	—	—	—	—	—	16	15·0	—	—	—	—	—	—	—	—	—	9	8·4
East Districts:																								
Shoreditch	98,134	—	80	44	—	3	—	—	8	1	1	137	18·2	—	—	—	1	1	1	7	10	1·3	90	12·0
Bethnal Green ...	110,085	—	157	48	—	—	—	1	14	1	1	222	26·3	—	2	—	5	1	—	10	18	2·1	112	13·3
Stepney	232,506	—	504	58	—	—	—	3	20	2	—	587	32·9	—	—	1	3	—	—	13	17	1·0	207	11·6
Poplar	153,644	—	283	94	—	—	—	—	1	—	—	391	33·2	—	—	2	7	—	—	4	13	1·1	138	11·7
South Districts:																								
Southwark	179,971	—	161	28	—	1	—	2	10	—	—	202	14·6	—	—	—	—	—	1	6	7	0·5	175	12·7
Bermondsey	124,239	—	196	37	—	2	—	3	7	—	—	245	25·7	—	—	1	—	3	—	6	10	1·0	83	8·7
Lambeth...	282,322	—	158	58	—	3	—	1	14	—	—	234	10·8	—	1	—	5	—	—	9	15	0·7	229	10·6
Battersea	159,316	—	116	75	—	—	—	2	4	2	—	199	16·3	—	—	—	2	—	—	6	8	0·7	124	10·1
Wandsworth... ...	333,693	—	194	76	—	—	—	—	14	—	—	284	11·1	—	—	—	3	—	—	2	5	2·0	248	9·7
Camberwell	273,802	—	212	105	—	1	—	1	15	—	—	334	15·9	—	—	—	3	1	—	10	14	0·7	215	10·2
Deptford...	111,205	—	105	31	—	—	—	2	5	—	—	143	16·8	—	1	—	1	1	—	6	9	1·1	81	9·5
Greenwich	98,484	—	76	25	—	2	—	1	5	—	—	109	14·4	—	—	—	1	1	—	6	8	1·1	84	11·1
Lewisham	157,754	—	77	28	—	—	—	—	5	—	—	110	8·5	—	—	—	3	—	—	5	8	0·6	124	9·6
Woolwich	136,237	—	83	31	—	—	—	1	6	1	—	122	11·7	—	—	1	2	2	—	—	5	0·5	92	8·8
Port of London ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

of the three preceding months, further rose to 2284 at the end of October; the weekly admissions averaged 364, against 179, 173, and 266 in the three preceding months. The prevalence of enteric fever was about equal to that in the two preceding months; of the 25 cases notified during the four weeks ended Oct. 30th, 4 belonged to Islington, and 3 each to Hampstead, St. Pancras, Shoreditch, and Lambeth. There were 19 cases of enteric fever under treatment in the Metropolitan Asylums Hospitals at the end of the month, against 24, 17, and 14 at the end of the three preceding months; the weekly admissions averaged 4, against 6, 3, and 3 in the three preceding months. Erysipelas was proportionally most prevalent in Hackney, Finsbury, Shoreditch, Bethnal Green, and Stepney. The 31 cases of puerperal fever included 4 in Poplar, 3 in Fulham, 3 in Stepney, and 3 in Bermondsey. The 9 cases of cerebro-spinal meningitis included 2 in Stepney and 2 in Battersea; while of the 9 cases of poliomyelitis, 2 belonged to St. Marylebone.

The mortality statistics in the table relate to the deaths of civilians actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided. During the four weeks ended Oct. 30th the deaths of 3523 London residents were registered, equal to an annual rate of 10·5 per 1000; in the three preceding months the rates had been 9·6, 9·3, and 9·9 per 1000. The death-rates ranged from 8·3 in Hampstead, 8·4 in the City of London, 8·6 in Chelsea, 8·7 in Bermondsey, and 8·8 in Woolwich, to 12·0 in Shoreditch, 12·7 in Southwark, 13·0 in St. Marylebone, 13·3 in Bethnal Green, and 18·8 in Holborn. The 3523 deaths from all causes included 253 which were referred to the principal infectious diseases; of these, 6 resulted from measles, 14 from scarlet fever, 63 from diphtheria, 12 from whooping-cough, 3 from enteric fever, and 155 from diarrhœa and enteritis among children under 2 years of age. No death from any of these diseases was recorded in the City of London. Among the metropolitan boroughs the lowest death-rates from these diseases were recorded in Chelsea, the City of Westminster, St. Marylebone, Hampstead, Stoke Newington, Southwark, and Woolwich; and the highest in Islington, Shoreditch, Bethnal Green, Poplar, Wandsworth, Deptford, and Greenwich. The 6 deaths from measles were 14 below the average number in the corresponding period of the five preceding years; of these, 2 belonged to Bethnal Green. The 14 fatal cases of scarlet fever exceeded the average by 1; of these, 2 belonged to Islington and 2 to Poplar. The 63 deaths from diphtheria were 3 above the average number; of these, 14 belonged to Islington, 7 to Poplar, 5 to Bethnal Green, and 5 to Lambeth. The 12 fatal cases of whooping-cough were 9 fewer than the average; of these, 3 belonged to Bermondsey and 2 to Woolwich. Three deaths from enteric fever were registered during the month, against an average of 10. The 155 fatal cases of infantile diarrhœa showed a decline of 131 from the average; the greatest proportional mortality from this disease occurred in Shoreditch, Bethnal Green, Stepney, Deptford, and Greenwich. In conclusion, it may be stated that the aggregate mortality in London during October from these principal infectious diseases was 38 per cent. below the average in the corresponding period of the five preceding years.

ROYAL UNITED HOSPITAL, BATH.—**The committee** of this hospital is appealing for funds for the establishment of a hospital for paying patients and a maternity home to contain about 40 beds. The entire cost of the scheme, which includes the transfer of the Royal United Hospital to a more healthy site, is estimated at £150,000. At present the subscriptions for the undertaking amount to about £24,000.

THE LATE DR. JOHN MICHIE.—**Dr. Michie, who** died recently in a London nursing home, qualified M.B., B.S. Melbourne in 1889, and afterwards held the appointments of house surgeon to the Adelaide Hospital, South Australia, and surgeon to the Adelaide Children's Hospital. Coming to England, he first practised in London, and then for many years resided at Bognor, where he took a prominent part in local affairs, and was elected to the chairmanship of the urban council. He retired from practice some four years ago, and intended to return to his native land, but was prevented by ill-health. A prominent Freemason, he was a Past Master of the Gordon Lodge at Bognor.

Correspondence.

"Audi alteram partem."

"ATYPICAL" ENTERIC FEVER.

To the Editor of THE LANCET.

SIR,—Since the thesis propounded by Dr. R. P. Garrow in THE LANCET of Oct. 30th bears directly upon an investigation carried out in this laboratory during the period 1916–1919,[1] I may, perhaps, be permitted a few comments. Dr. Garrow takes as his text, "'Atypical' enteric fever is essentially the phantom product of bacteriology," and as his main sub-heading, "I believe that enteric fever is frequently undiagnosed but practically never undiagnosable clinically." Whether the latter part of the second statement is true I am not competent to judge. From the public writings of clinicians of wide experience, and from the opinions which I have heard many of them express, I should have doubted it.

That atypical forms of enteric fever should result from the widespread use of prophylactic inoculation would seem, from analogy with other diseases, to be highly probable. Whether Dr. Garrow is right in blaming clinicians for failure to diagnose all enteric infections is, however, for others to decide. We are in agreement on the only essential point; that they are frequently undiagnosed. From the experience gained in dealing with sick evacuated to this country during the period in question, we gained the impression that one of the main difficulties in the way of accurate diagnosis was the rapid transference from one place of observation to another, which was necessitated by the exigencies of warfare on the Western Front. Dr. Garrow contends that many cases have been diagnosed as enteric fever on totally insufficient evidence afforded by laboratory findings. Here we are in complete agreement, and if he will refer to our report, he will find this agreement specifically expressed. The reason for some at least of these dubious diagnoses is, I think, readily explained by the existence of a curious delusion, in which Dr. Garrow evidently shares, for he says: "All the technique that is required for the complete pathological investigation of the enteric fevers can be mastered in a few months. A relatively short period of training serves to turn out an 'expert bacteriologist'—so far as one group of organisms is concerned."

The essence of the paper, as I am sure he will agree, is an attack on the method elaborated by Professor G. Dreyer and his co-workers for the diagnosis of enteric infections in inoculated individuals, and made widely available by the action of the Medical Research Council. Dr. Garrow refers to the fact that experimental re-inoculation of an immunised animal, with an antigen unrelated to that used in the first injection, may be followed by fluctuations in the agglutination titre of the serum for the bacteria with which this initial inoculation was made. He assumes that a similar phenomenon may take place when a second unrelated infection occurs, and quotes in support of this the results obtained by the American Red Cross Committee on Trench Fever, and certain isolated cases in which he disagrees with the serological diagnosis on clinical grounds. The vital point is, of course, do such fluctuations actually occur when some other infection arises in an inoculated individual? Professor Dreyer has published certain results which he considers refute this suggestion, and has given extracts from other more complete series of cases, the records of which were unfortunately destroyed by fire.

In considering our own results we were led to differ from Professor Dreyer on certain points connected with the general principles which underlie the technique involved, but we came to the definite conclusion that the procedure he advocated afforded the best means at our disposal for the diagnosis of enteric infections in inoculated patients under certain conditions, and that when sufficient care was exercised, the method probably gave a very high percentage of correct diagnostic results. These conclusions were based on a careful examination of some 500 cases, and the objections mentioned above, particularly the findings of the American Red Cross Committee, were carefully considered. With our conclusions Dr. Garrow may very possibly disagree, but until he has shown adequate cause for doing so I cannot think that he will feel completely satisfied; for he says, in speaking of Professor Dreyer's claim for the reliability of his technique—"It is essential to the purposes of this paper to show that this claim is wholly unsubstantiated by the published evidence."

I am, Sir, yours faithfully,

W. W. C. TOPLEY.

The Institute of Pathology, Charing Cross Hospital,
Oct. 30th, 1920

[1] Topley, Platts, and Imrie: A Report on the Probable Proportion of Enteric Infections among undiagnosed febrile cases invalided from the Western Front since October, 1915. Med. Res. Council, Spec. Rep. Series 48, 1920.

To the Editor of THE LANCET.

SIR,—In exposing the fallacies underlying the view that a single laboratory test (other than direct demonstration of the causal agent in a situation allowing of no dispute) can be of absolute diagnostic worth, Dr. R. P. Garrow, in his paper in your issue of Oct. 30th, has done a valuable service to both clinical and laboratory medicine. Most clinicians with wide experience of the pyrexial problems of the war will support Dr. Garrow in his contention that the so-called atypical forms of typhoid-group infection to which he refers may probably be regarded as non-existent, and his claim that the true infections do not vary greatly in their clinical characters, although they may show wide variations in severity, is also justified in the experience of others.

The great advances which have been made of recent years in laboratory methods of diagnosis have produced an unfortunate temporary reaction, resulting often in loss of clinical confidence and judgment, and in a tendency to accept without sufficient dispute pronouncements made by the bacteriologist or chemist. In the latter days of the war there was a growing scepticism among clinicians and others as to the value of "diagnosis by agglutinations," and by now it must be apparent that a laboratory diagnosis based on agglutinations alone is of no more value than a clinical diagnosis based on the single sign of splenic enlargement, at any rate in the case of inoculated subjects. Recovery of the organism from the blood, on the other hand, gives the most absolute evidence available, but here the possible fallacies are inconsiderable.

At a certain stage of the war it was circulated among forward units in France that too large a number of paratyphoid cases were arriving at a certain base labelled as trench fever. It was later shown, I believe, that the mistake was on the side of the base-unit, and that erroneous agglutination methods or conclusions were to blame. While confident that we were not consciously overlooking typhoid-group infections, at the suggestion of and in collaboration with Captain Adrian Stokes I decided to investigate more fully a series of cases of trench fever or P.U.O. in which there were observed any single clinical feature, such a sustained pyrexia, splenic enlargement, diarrhœa, or any combination of such features, suggesting the possibility of a typhoid-group infection. The cases were detained in a C.C.S. and investigated by blood culture when the pyrexia was sufficient, by fæces-culture and agglutination tests; in most cases the agglutination tests were performed on two separate occasions with an interval of a few days, though full serial tests were admittedly not employed. Between 20 and 30 cases were so examined; in no case did I entertain any serious clinical suspicion that I was dealing with a typhoid-group infection, although the cases were the most suspicious I could at that time select; in no instance was a laboratory diagnosis of "typhoid-group" made. In view of these negative findings it seemed improbable that the far more atypical cases of transient, swinging, or relapsing fever could be typhoid-group infections, and I felt justified in my previous clinical differentiations, more particularly as I had the support of my

pathological colleague, in concert with whom I had worked during a typhoid epidemic and for many months thereafter. When it is further remembered that there occur from time to time cases of clinically indisputable typhoid fever in which all laboratory efforts fail to achieve a diagnosis it seems more than ever obvious that we cannot rely on single non-specific tests, but rather must apply and combine all our clinical and laboratory energies in the search for a true diagnosis.

In 1915 there came under my care during the Belgian epidemic a refugee presenting all the classical features of a case of typhoid of moderate severity—a typical pyrexial curve with relapse; a characteristic pulse-temperature ratio; tumid abdomen; large spleen; rose spots; femoral thrombosis. Blood cultivations were repeatedly negative, and all attempts to cultivate from fæces, urine, rose spots, and liver puncture by my colleague Captain C. Clarke failed; nor were there ever developed conclusive agglutination reactions. The fallacy of the non-specific test is again illustrated in the Wassermann reaction. There is a quite common tendency to regard a positive Wassermann in an obscure condition as absolute evidence that the condition itself is syphilitic. While the presence of the treponema in a lesion may be as nearly absolute evidence as is the recovery of *B. typhosus* from the blood, a positive Wassermann per se is no more a positive diagnostic proof than is a positive agglutination test per se.

In conclusion, I would urge, with Dr. Garrow, that the clinicians rather than the laboratory-workers have been at fault in their too casual acceptance of these tests, an insufficient study of their significance, and also in the needless loss of confidence in their own clinical ability which the discovery of more minute scientific methods seems to have engendered.

I am, Sir, yours faithfully,

J. A. RYLE.

The Warden's House, Guy's Hospital, Oct. 31st, 1920.

BRADFORD MUNICIPAL HOSPITAL.

To the Editor of THE LANCET.

SIR,—In addressing a gathering of medical and University Members of Parliament on Oct. 26th Dr. Addison spoke of the conversion of a Bradford Poor-law infirmary into a general hospital, adding that in what he was doing "he had obtained the views of the Bradford division of the British Medical Association, and they agreed with the principles of the proposal as regards Bradford, with some modifications."

In the name of the executive committee of the Bradford division of the British Medical Association I beg to state that this is quite erroneous. The division was never asked for its opinion upon the principles of the proposal, but after the medical profession in Bradford had made through various channels several unsuccessful applications for information, on Sept. 30th, six months after the hospital had been taken over by the health authorities from the guardians, a lengthy document entitled, "Municipal General Hospital, St. Luke's. Report by the Medical Officer of Health," was sent to the executive committee of the division, and they were asked in a covering note "whether your executive committee have any observations to make thereon." The committee carefully considered the detailed report and made several observations thereon, some of which were in the form of questions, but they certainly did not express any agreement with the principles of the proposal, nor were they invited to do so.

Over three months before this—on June 15th—a strong protest had been sent to the health committee in the form of a resolution worded as follows:—

> That in the interests of the public it is advisable and necessary that no arrangements should be made for the work of the municipal hospital as far as concerns the medical profession without free consultation with the profession of the district.

No notice was taken of this beyond a formal acknowledgment of receipt.

I am, Sir, yours faithfully,

W. N. WEST WATSON,

Hon. Sec., Bradford Division, British Medical Association.

Nov. 5th, 1920.

CŒLIAC DISEASE.

To the Editor of THE LANCET.

SIR,—The paper by Dr. Reginald Miller and others in your issue of Oct. 30th on the treatment of cœliac disease by bile-salts affords a valuable contribution to our knowledge of the symptom-complex first described by the late Dr. Samuel Gee under the name of "cœliac disease." The careful analyses of fat-content of the stools is of great interest. In their reference to the literature of the subject the authors make no mention of a joint paper by Dr. F. J. Poynton, Dr. D. N. Nabarro, and myself entitled "A Contribution to the Study of a Group of Cases of Chronic Recurrent Diarrhœa in Childhood," read at a meeting of the Medical Section of the Royal Society of Medicine, Oct. 28th, 1913, and afterwards published in the Society's Proceedings, Vol. VII., 1913, pp. 10–32, and reprinted in the *British Journal of Children's Diseases*, April and May, 1914, Vol. XI.

The title "cœliac disease" was purposely avoided in this paper, inasmuch as it seemed to us that the phenomenon was very possibly the result of alteration of intestinal function consequent on acute or chronic diarrhœa and not necessarily a disease sui generis. The administration of ox-bile in one of the group of nine cases described by us proved unsuccessful, reliance was chiefly placed on modification of diet on the lines followed by Dr. Miller. With his suggestion that he is the first to place on record the occurence of "late rickets" in association with cœliac disease we cannot agree. One of our cases, a girl then aged 9 years, exhibited the characteristic deformities and skiagraphic changes of late rickets. It is of interest that she has again come under observation recently, now aged 17 years, is only 3 ft. 11 in. in height, while the rachitic deformity has progressed to such an extent that an osteotomy on the right femur for correction of genu valgum has had to be performed—the left femur having previously been accidentally broken. In all, four of the nine cases described by us showed rickety changes.

I am, Sir, yours faithfully,

RICHARD ARMSTRONG,
Physician to the Children's Department,
Charing Cross Hospital.

Nov. 3rd, 1920.

THE DIAGNOSIS OF MENTAL DEFICIENCY.

To the Editor of THE LANCET.

SIR,—Your annotation in THE LANCET of Nov. 6th on "What constitutes Mental Defect?" raises, as you very truly remark, a point of the utmost importance. It cannot be too clearly emphasised that although in mental deficiency the defect is a psychological one, yet the criterion by which this defect must be gauged is a social one; in other words, it is an incapacity of the individual to adapt himself to the requirements of society without external supervision or support. Ability to do this may be regarded as the essential quality of the "normal" mind, and it is by no means synonymous with ability to pass certain psychological tests. In addition to a general comprehension and capacity for ideation, it necessitates an ability to abstract, compare, and form judgments; to look ahead and make plan in accordance with those judgments; and to coördinate and control conduct in accordance with the plans so formed. A person who is lacking in these higher mental qualities, and is therefore mentally defective, may still have a high mental age as judged by tests, whilst one who fails in these tests may still possess the qualities of mind needed for adapting himself to the requirements of society. The explanation of this is that although the tests at present devised are useful as a means of grading normal children in certain respects, they fail to test those qualities of mind I have mentioned, and hence, by themselves, they cannot be relied upon for diagnosis. Even in the case of tests which most nearly reproduce social situations there is still a great difference between passing these in a laboratory and under the stress and strain of real life. To make use of an analogy, a person may qualify as a marksman

when shooting at a target on a range, but his practice may be very different when he is called upon to fire over the top of a trench at masses of an advancing enemy a hundred yards away. Experience shows that many defectives do well under the routine and discipline of a prison or other institution, but prove quite incapable of managing their affairs if called upon to face life on their own responsibility.

Unfortunately there is a tendency to regard mental defect from a much too restricted point of view, and to be too much influenced by one set of factors only. The eugenist finds sufficient evidence in the presence of a morbid family history; the follower of Lombroso in stigmata of degeneracy; the sociologist in anti-social conduct; the psychologist in failure to pass certain tests. In the matter of diagnosis one might almost say that this generation asks for a sign, for an automatic register, an infallible penny-in-the-slot machine—there is no such sign.

Mental deficiency is a symptom of imperfect or arrested development of mind, which may not only be due to many causes, but which may be simulated by many conditions. The diagnosis of the milder degrees requires keen observation, ample experience, and very considerable medical knowledge; and whilst giving due attention to all the above data, there is no condition in which it is more necessary that the case should be considered in all its bearings. It is far from my intention to decry the use of psychological tests, of which, indeed, I make constant use, but the experienced physician will usually be able to come to a conclusion without any elaborate series of tests, and the inexperienced will probably fail in his diagnosis with them.

I am, Sir, yours faithfully,

A. F. TREDGOLD, M.D.

New Cavendish-street, W., Nov. 6th, 1920.

THE PRESENT POSITION OF MIDWIFERY.

To the Editor of THE LANCET.

SIR,—I have read with great pleasure and profit Mr. Victor Bonney's charming address at Norwich. But there is just one point which has puzzled me. After calling attention to the problem of intrinsic infection and enforcing the necessity of sterilising the birth area, he goes the length of teaching that in cases of instrumental delivery a pad soaked in one of the modern antiseptics should be stitched over the anus so as to exclude all bowel organisms. With one's mind fixed on the dangers of the anal region, one experiences a mental shock when he calls attention to Eardley Holland's teaching that the presentation and degree of dilatation of the cervix could be well detected by rectal examination. Which is the safer proceeding—to learn the presentation per vaginam or per rectum?

I am, Sir, yours faithfully,

Exeter, Nov. 7th, 1920. J. PEREIRA GRAY.

THE HEREDITARY FACTOR IN TUBERCULOSIS.

To the Editor of THE LANCET.

SIR,—Apart from the theoretical interest of what is meant by the term "inherited diathesis," the recently published papers of Professor S. L. Cummins upon racial differences in susceptibility to tuberculosis raise a point of great importance. According to Professor Cummins's argument, the Native Labour Corps working in France succumbed very readily to tuberculosis because they were comparatively virgin soil, and thus acquired resistance is the essential factor in warding off the disease. Prevention of tuberculosis therefore depends not so much on environment, but on gradually building up the resistance of the individual by infection with doses of tubercle bacilli insufficient at any one time to cause actual disease. Professor Cummins concludes that immunity is the way by which prevention of tuberculosis must be achieved, and suggests the possibility of accomplishing this by means of artificial vaccination.

The practical application of this theory is both of extreme interest and of great importance to the State. If virgin soil is the factor of paramount importance in the predisposition towards tuberculosis, is it wise to take great precautions in sterilising infants' foods? Would it not be well to accustom the baby to the tubercle bacillus by giving him a few with his feeds, or, at any rate, by not endeavouring by every means to eliminate the organism and prevent its access to the body. This, of course, is no new proposition, but it appears to be the logical conclusion of Professor Cummins's argument.

It would be interesting if Professor Cummins would state his views on this subject—we know that 6·5 per cent. of the 943 samples of milk examined in London last year contained tubercle bacilli; would this be a suitable means of immunising the children of London, or would the risk of mass infection be too great?

I am, Sir, yours faithfully,

Weymouth-street, W., Nov. 5th, 1920. G. E. BEAUMONT.

TRANSPOSITION OF VISCERA.

To the Editor of THE LANCET.

SIR,—A few months ago I discovered an interesting case of transposition of viscera during a routine inspection in one of our elementary schools. The case was that of a boy of 12 years whose apex beat and heart sounds were found on his right side. Percussion showed liver dullness on the left. He was X rayed at the Dundee Royal Infirmary by Dr. George Miller and a skiagram of his thorax was obtained which showed the heart and liver transposed. During the screening of the abdomen the fundus of the stomach was distinctly visible on the right side, and mouthfuls of a bismuth meal could be traced to the lower part of the stomach, well to the right of the middle line. The diagnosis was made of transposition of the viscera. The boy is perfectly healthy and has had no illness except measles in early childhood.—I am, Sir, yours faithfully,

CATHERINE KIRK,

Nov. 6th, 1920. Assistant M.O. to Dundee Education Authority.

"THE RIGHT TO STRIKE."

To the Editor of THE LANCET.

SIR,—I was extremely amused by the views of the Medical Secretary on my acting, the more so as I find I was apparently representing an official who in real life is represented by himself! He must forgive me therefore if I do not attach too high a value to an opinion which it would appear you did not ask him for, and which he becomes so sensibly confused over in that he mixes acting and authorship in a woeful mess. For after saying that I am "a futile person," which he thinks is not the author's intentions, he condemns me, "after listening to *my* inanities" (the italics are mine), to death, apparently for speaking the author's words! or does he think I make them up as I go along? Of one thing I am sure, and no doubt it occurred to him at once, and that is that he could have done it much better than I, and I hope this may solace him in his quieter moments.—I am, Sir, yours faithfully,

Savage Club, Nov. 4th, 1920. THE ACTOR.

*** We do not quite understand our correspondent's letter. The communication to which he alludes was written by the Medical Secretary, while the criticism to which he takes exception referred to the actor who played the part of solicitor. Of course, the more inane the author's conception, the more does inanity become a virtue in the actor. We are sure our medical correspondent did not think he was criticising the acting in his recommendation that such a character as was presented would do well to shoot himself.—ED. L.

WANDSWORTH BOROUGH MATERNITY HOME.—This home was visited by H.M. the Queen on Nov. 6th. It has been handed over to the borough council, free of debt, as a memorial to the officers and men of the borough who died on service. It has been equipped on modern lines and will be open to patients in a short time. The accommodation available consists of 22 beds, in wards of from one to five beds. The home will be maintained by the borough council, partly by patients' fees, ranging from £1 to £4 a week, partly out of the rates, and partly by grants from the Ministry of Health.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

Surg. Rear-Admiral Sir R. Hill, K.C.M.G., C.B., C.V.O., Director-General of the Medical Department of the Royal Navy, to be Surgeon Vice-Admiral.

ROYAL ARMY MEDICAL COLLEGE.

Lieut.-Col. J. W. West, C.M.G., R.A.M.C., to be a Professor, vice Col. E. M. Pilcher, C.B., C.B.E., D.S.O., K.H.S.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Col. C. T. Samman is placed on retired pay.

Lieut.-Col. S. G. Butler retires on retired pay, and is granted the rank of Colonel.

P. St. J. Wilkinson, late Major, S. Afr. M.C., to be temporary Major.

Capt. T. E. Osmond retires, receiving a gratuity.

The undermentioned late temporary Captains to be temporary Captains: C. L. Herklots, A. Leach.

J. H. Howitt to be temporary Lieutenant.

Officers relinquishing their commissions:—Temp. Capt. (acting Major) B. J. Collingwood (granted the rank of Major). Temporary Captains retaining the rank of Captain: J. R. Howitt, W. N. Leak, J. B. Mason, A. S. Webley, E. R. Tweed, J. McLaw (on ceasing duty with South African Native Labour Corps), H. Joslen, J. F. Blackett, A. F. Campbell, W. B. Honey, C. I. Hannigan, J. T. Reardon, H. F. Sheldon, T. Marlin. Temp. Hon. Capt. H. Halsted (retains the honorary rank of Captain). Temp. Lieut. T. W. Smart (retains the rank of Lieutenant).

South African Medical Corps.

The undermentioned relinquish their temporary commissions on ceasing to be employed with the Union Imperial Service Contingents, and are granted the rank of Major: Capts. W. D. Miller, J. Evans; Temp. Capt. A. H. Bell (retains the rank of Captain).

SPECIAL RESERVE OF OFFICERS.

Capt. P. J. Corcoran resigns his commission and is granted the rank of Captain.

The undermentioned Captains relinquish their commissions and retain the rank of Captain:—E. Kean, P. M. Neighbour, D. A. Dyer, J. Scott, A. A. Prichard, J. O. P. Smith, J. P. J. Jenkins, J. F. Campbell, J. W. Mackay, W. H. Simmons, W. Young, F. Portas, C. V. Braimbridge, A. Fowler, C. Simpson.

TERRITORIAL FORCE.

Capt. W. Blackwood resigns his commission and is granted the rank of Lieutenant-Colonel.

Capt. (acting Major) A. Rankine relinquishes the acting rank of Major on ceasing to be specially employed.

Capts. H. F. Wilkin and L. A. Harwood to be Majors.

2nd London Sanitary Company: Capt. (acting Major) R. O. Sibley relinquishes the acting rank of Major on vacating appointment as Deputy Assistant Director of Medical Services.

INDIAN MEDICAL SERVICE.

Temporary Lieutenants to be temporary Captains:—Jatindranath Mukerji, Hari Das, K. Mullen, Daulat Manghirmal Lala, Jotindra Chandra Sinha, Aerath Narayanan Nanoo Panikker.

To be Lieutenants: E. T. N. Taylor (temp. Capt., I.M.S.), Ajab Singh Garewal (temp. Capt., I.M.S.), A. V. Lopes (temp. Capt., I.M.S.).

Temp. Capts. A. D'Silva, Hari Prasanna Mukerjee, Hari Dhan Banarji, Manmatha Nath Pal, Balajipetah Sesha Chalam relinquish their commissions.

The King has approved the resignation of Major Siavax Byramjee Mehta.

FOREIGN DECORATIONS.

French.

Légion d'Honneur.—Commandeur: Lt.-Gen. Sir T. H. J. C. Goodwin, K.C.B., C.M.G., D.S.O., K.H.S. *Officier:* Hon. Maj.-Gen. Sir J. M. Irwin, K.C.M.G., C.B. (ret. pay). *Chevalier:* Col. R. J. Blackham, C.B., C.M.G., C.I.E., D.S.O.; Lt.-Col. J. P. Decarie, Can. A.M.C.

Croix de Guerre.—Capt. R. Burgess, D.S.O., M.C., R.A.M.C. (T.F.) (3rd award); Lt.-Gen. Sir C. H. Burtchaell, K.C.B., C.M.G., K.H.S.; Capt. O. G. Donovan, Can. A.M.C. (2nd award); Temp. Capt. (acting Maj.) T. A. Lawder, R.A.M.C. (3rd award); Temp. Capt. F. P. Montgomery, M.C., R.A.M.C. (2nd award); Capt. J. A. A. Pare, M.C., Can. A.M.C. (2nd award); Capt. (acting Maj.) P. J. Ryan, M.C., R.A.M.C. (3rd award); Maj.-Gen. Sir H. N. Thompson, K.C.M.G., C.B., D.S.O. (2nd award); Temp. Capt. (acting Maj.) F. B. Winfield, R.A.M.C. (2nd award).

Médaille d'Honneur avec Glaives (en Vermeil).—Maj. J. A. Lussier, Can. A.M.C.; Temp. Capt. A. Sandison, R.A.M.C.; Temp. Capt. A. H. Style, R.A.M.C.

Italian.

Order of the Crown of Italy.—Cavalier: Lt. R. T. F. Barnett, R.A.M.C. (T.F.).

Silver Medal della Salute Publica.—Brev. Lt.-Col. J. G. Bell, D.S.O., R.A.M.C.; Col. J. V. Forrest, C.B., C.M.G.; Temp. Capt. W. Parker, M.C., R.A.M.C.; Lt.-Col. J. C. Robertson, C.M.G., C.I.E., C.B.E., I.M.S.; Lt.-Col. J. W. West, C.M.G., R.A.M.C.

Nepal.

Order of the Star of Nepal.—3rd Class: Lt.-Col. (acting Col.) T. H. Foulkes, C.I.E., I.M.S.; Lt.-Col. J. W. Grant, I.M.S.

CLOSURE OF THE DARTMOUTH (DEVON) COTTAGE HOSPITAL.—The committee of this institution, owing to the difficulty of obtaining a suitable resident staff, has closed the hospital. A meeting of the inhabitants will shortly be convened to decide as to the future of the charity.

Parliamentary Intelligence.

HOUSE OF COMMONS.

WEDNESDAY, NOV. 3RD.

Treatment of Loss of Memory Cases.

Mr. AUBREY HERBERT asked the Secretary for War whether ex-Service men who from shell shock or some other cause had lost their memory during the war would be provided with suitable accommodation in homes and not in lunatic asylums.—Major TRYON (Parliamentary Secretary to the Ministry of Pensions) replied: Special accommodation is provided by my Department for any ex-Service man suffering from loss of memory due to his service in the late war, but should the malady unfortunately develop into certifiable insanity the patient can no longer be detained in a Ministry institution, but must be transferred, in accordance with the present Lunacy Laws, to the care of the Board of Control.

Maintenance of Pauper Lunatics.

Lieutenant-Commander HILTON YOUNG asked the Minister of Health whether, in attempting an equitable readjustment of existing Government subventions in relief of rates, he would take into consideration the inadequacy of the 4*s.* allowance in respect of the maintenance of pauper lunatics.—Dr. ADDISON replied: Yes, Sir.

Public Health (Tuberculosis) Bill.

Dr. ADDISON presented a Bill "to make further provision with respect to arrangements by local authorities for the treatment of tuberculosis." The Bill was read a first time.

THURSDAY, NOV. 4TH.

MINISTRY OF HEALTH BILL.

Dr. ADDISON, in moving the second reading of the Ministry of Health (Miscellaneous Provisions) Bill, said that it dealt for the most part with matters arising ont of post-war problems of local authorities. Many of the statements that had been made concerning the Bill were quite ill-informed, and had not arisen from a close examination of the measure. Having outlined the proposals of the Bill with respect to housing the right honourable gentleman went on to deal with Clause 10. During the war, he said, they found a large number of men suffering from shell shock and similar affections became mentally disordered for a short time. A system was set up whereby suitable cases had treatment in mental hospitals. In Clause 10 provision was made for the continuance of this form of treatment under very stringent safeguards. It was vital that this class of men should escape the stigma and disabilities of being classed as lunatics. In the first place the clause provided that the persons so treated must be suffering from mental disorder which was incipient in character and of recent origin, which, of course, excluded early cases. The next thing it did was to limit the treatment in any individual case to six months. Safeguards were necessary, as it would clearly stultify the whole effort if any irregularities occurred. The places where persons were to be treated were to be certified, examined, and visited. Persons could only receive treatment on the certificate of two duly qualified medical practitioners; they could only be received on their own consent; and they could discharge themselves at any time by giving notice in writing. The scheme did not apply only to ex-Service men. They did not anticipate that it would require more than the existing staff.

Mr. RENDALL: Does this clause mean that the right honourable gentleman does not propose to ask for the assistance of the Lunacy Commissioners in inspecting these places?

Dr. ADDISON said he did not say that. It might be done with some of their staff or assistants, but at the present time he saw no reason to add to the staff. The proposal with regard to hospitals had received the most criticism. One headline said, "Hospitals on the Rates." That was not the proposal of the Bill. At no time in our history, and certainly not after the experience of the war, was it wise or practicable to ignore a really urgent public necessity. Nothing could be more shortsighted for those who had a real interest in the ordered progress of society than to play into the hands of their opponents by doing a thing of that kind. The fact was that up and down the country the accommodation in our voluntary hospitals was, unfortunately, quite insufficient to meet the public need. Everyone would admit that it was undesirable that the voluntary hospitals should come upon the rates. So far from having any desire to bring voluntary hospitals on the rates he had taken active steps for some months past to endeavour to keep them off, and he thought that those efforts for the present and for the immediate future had been successful. During the five years 1913 to 1918 there was in the case of the voluntary provincial hospitals an excess of expenditure

over income of £1,300,000. In the case of the London hospitals it was in round figures £900,000. During those years those hospitals received a number of free legacies, not ear-marked for the maintenance of particular beds, and so on, and he thought it was quite fair to ask the hospitals in the present emergency that these legacies should be devoted to ordinary expenditure. That would enable the expenditure for those five years to balance. But while that was true in the aggregate there were some individual hospitals whose income and expenditure could not be balanced in this way. Therefore they set out to see if some means could be devised first for assisting the income of the hospitals, and further for securing special assistance for those which were most needy. During the last two years, with the cost of food, wages, maintenance, and so on, unfortunately the expenditure falling on the voluntary hospitals had risen much more than the income. They therefore sought the coöperation of the King Edward Hospital Fund, and they had set aside out of their accumulated reserve a sum of £250,000 towards the London hospitals. As the King Edward Fund limited its operations to London, negotiations took place with the National Relief Fund, which had moneys that could be made available for this purpose, seeing that the distress of the hospitals arose out of the war. The National Relief Fund had set aside the magnificent sum of £700,000 to help the voluntary hospitals.

Mr. MARRIOTT: That is for the provinces?

Voluntary Contributions to Hospitals.

Dr. ADDISON said it was mainly for the provinces, but it might be London too, and a body to regulate the distribution was now in being. Sir Arthur Stanley was organising a campaign for increased assistance, which they all hoped would be successful. He (Dr. Addison) claimed that there was nothing new in the proposal in Clause 11 enabling local authorities, if they desired to do so, to make a voluntary contribution in aid of hospitals. Since 1916 various authorities had taken power by private Bills to make these contributions to hospitals. Four cases had been before the House in 12 months. The Bill as it stood would not enable the local authorities to take over any existing voluntary hospitals. The pressure on the hospital accommodation of the country, however, could not in any case be met by the efforts, great and noble as they were, of the voluntary hospitals. They had a condition of things in many of our great centres of population that the voluntary hospitals were crammed, and they had to clear their patients out in less time than they should in view of their enormous waiting lists, while at the same time in the same place they had hospitals maintained by the rates with a large number of their beds empty. There were in the country 54 Poor-law hospitals which were entirely separated from the workhouses, and 33 of these had already been carefully examined by experts appointed by himself. The reports upon them amounted to this: That in the vast majority of cases they were perfectly adaptable and in many cases quite equipped for general purposes. But the reason they were empty was that they were Poor-law institutions. He therefore requested three gentlemen, one from Newcastle-on-Tyne, another, Dr. Elliott of St. Thomas's, and the third, one of his own staff and an inspector of hospitals during the war, to make a detailed examination of these places to see to what extent they were fit and what would be required to make them fit for general use if it could be so arranged. The reports were in the main altogether favourable, but there were some surprising facts. The Paddington Infirmary, for instance, was now receiving the overflow from St. Mary's Hospital. Lambeth Hospital, with 800 beds, was also admitting cases from St. Thomas's, Guy's, and King's at the present time. Camberwell was receiving cases from King's, Guy's, and St. Thomas's. In the case of Camberwell, with 850 beds, on August 18th this year 200 were empty, whilst the population of the district was crying out for hospital bed accommodation. Withington Hospital, Manchester, with 2600 beds, had 1100 of those beds empty on Sept. 23rd. He submitted that in present circumstances it was imperative that some practical scheme should be devised where necessary for making use of the good bed accommodation that existed. That was the justification for the proposals of the Bill. Some authorities had already taken the law into their own hands. There was a proposal some time ago from the city of Birmingham, which had a large Poor-law infirmary there, which, however, he could not accept. In the city of Bradford and at Willesden they had converted hospitals under the Poor-law into general hospitals. He proposed, in order to meet the objections, which he fully understood, and to avoid increasing expenditure unnecessarily, to make certain alterations in Clause 11. In order to secure that the Minister responsible might be hauled up at Question Time and made answerable for the schemes he sanctioned, and also for the conditions applying to them, he would suggest that in Clause 11 the wording, "That the scheme shall be on certain conditions approved by the Minister ....." should apply to the whole clause. Further, he suggested that paragraphs (*a*) and (*c*) of the clause should be altered so that the authority should be limited to taking over under proper agreements all existing Poor-law hospitals, and that this power should not extend to taking over voluntary hospitals. This also shut out the establishment of additional hospitals.

Two Classes of Objections.

There were two classes of objections—the first professional and the second rate objections. He had a deputation the other day from the British Medical Association, and he found that their representatives were desirous of helping the Ministry in every way they could. They said they came in no spirit of controversy, and the speakers were deeply in sympathy with the scheme as a whole. These medical men went on to suggest that there ought to be sufficient safeguards to secure that bona fide professional considerations and objections had an opportunity of being properly considered and fairly met, and with that he entirely agreed. The first proposal was that the scheme would require the sanction of the Minister. He told these gentlemen that so far as he was concerned not in individual cases affecting administrative action, but on the general principles and policy governing the recognition of schemes he was most anxious to consult with them on one condition, that somebody must be produced to whom he could fairly say that he had done what he had been asked to do. In Bradford they had agreed to set up a local medical body with which they could discuss questions from now onwards. He thought that these representations would suffice to meet the representations which had been made to him on the professional question. As regarded the bigger question of the burden of the rates, Dr. Addison claimed that the limitations of the clause to which he had referred went a long way to meet the misgivings which had been expressed in this connexion. There were only two real alternatives in respect of the policy we can adopt over local expenditure. The House might well say that they declined to give a blank cheque to a local authority, but let them see where that led them. If Parliament was to impose conditions upon expenditure it would lead certainly to two results. If it was intended practically to control the whole sphere of local government expenditure it would lead to the establishment of a growing bureaucracy in Whitehall and elsewhere, and he doubted if that would be a popular institution. He was quite sure that it would lead to the destruction of local government, because no great city and no important local body was going to get its best citizens to put their minds and energies into local government if they were not permitted to do more or less as they wished with their own. The right principle to adopt was to put safeguards and limitations of a reasonable kind and to encourage and stimulate by all possible means the control of the electors over local government.

Rejection of the Bill Moved.

Earl WINTERTON, in moving the rejection of the measure, said that his first objection to the Bill was that it dealt with half a dozen different subjects. It dealt with the question of lunacy, and proposed most formidable changes in the existing law, while it removed one of the principal safeguards which the subject now had under the Lunacy Laws. It also proposed much more wide and sweeping changes than the right honourable gentleman would admit in the relations of local authorities to voluntary hospitals. He thought that Clause 10, which dealt with treatment for incipient mental disorder, would prove one of the most contentious and controversial clauses in the Bill. Under Section 315 of the present Lunacy Act a penalty was imposed upon anyone detaining a mental case for profit without complying with the necessary procedure of judicial investigation prescribed for the protection of the individual. Under Clause 10 of this Bill all that safeguard was swept away, and the Minister was given practically carte blanche to override the Lunacy Act. He did not know why the Ministry of Health should override the Lunacy Commissioners. Personally, he did not think that its attempts to deal with other questions and to deal with other reforms would lead them to believe that it would be any more successful in this. Many people who had studied the question held the view that even the Lunacy Acts were not sufficiently strong to protect the subject from possible mishandling or ill-treatment at the hands of those, whether relatives or doctors, who might be ill-disposed towards him. What made this Bill all the more dangerous was that under the Lunacy Acts only a certified person could be detained or treated as a lunatic, whereas under this clause it would be possible with very small safeguards for, say a neurasthenic, who was not familiar with the law, to be incarcerated without any appeal. Many authorities who had taken a lifelong interest in the treatment of these unfortunate people afflicted with mental delusions objected strongly to the clause as it stood, and they had supplied him with a memorandum in which they urged that what was needed was not such institutions as were proposed by the Bill, but the provision of cheerful

hospitals run on a purely hospital footing, not for profit, but philanthropically and without detention.

Captain ELLIOT: Does the noble lord propose that these hospitals should be run at the expense of the rates?

Earl WINTERTON said he did not agree with the proposals of the Ministry. He did not believe that the voluntary effort of the country on behalf of the hospitals was anything like exhausted. He was not going into the question of voluntary hospitals versus State hospitals, but he should like to ask whether, in any locality in which the local authority made a contribution to a voluntary hospital, and in which—as happened unfortunately to be almost universally the case—the rates were somewhere near 20s. in the £, anyone could contend for a moment that the people who would otherwise give voluntary contributions to that hospital would not refuse on the ground that they were being rated for the purpose of what hitherto they had done voluntarily. They heard a good deal of generalisation from the right honourable gentleman, but they never heard how he proposed to carry on in the future—whether the voluntary system was to continue or whether the whole hospital system of the country was to be carried on by the State or by the local authorities. If Dr. Addison was anxious to see the voluntary system maintained, he should give it a fair chance, and it would not have a fair chance if local authorities were encouraged to give subscriptions out of the rates. The right honourable gentleman spoke as if he were in a position to dictate to hospitals as to the way they should go. So long as the voluntary hospitals were voluntary they proposed to manage themselves. They did not propose to be managed either by the State or by the British Medical Association.

Sir H. CRAIK, in seconding the motion for rejection, said he agreed with Lord Winterton and with his medical friends with respect to the importance of the medical provisions of the Bill, but surely a subject of this sort involving points of great importance to the individuals and points of delicacy on which the House had to be advised by the most mature and careful medical authority could not be dealt with in a few lines of one clause. Yet, in effect, they were told that if they did not take it as a small almost infinitesimally minute portion of one Bill they were opposing the whole matter and refusing to move forward. That was an unjust argument, and led to the destruction of all sound Parliamentary proceedings. Even the worm must turn, and this was a Bill which, looking to his past when he helped Mr. Bonar Law in opposing similar socialistic projects, he could not now support. It increased unduly the power of the bureaucracy, fettered unduly their freedom of action, was contrary to the whole genius of our people, and launched the country into an expenditure of a ruinous character.

More Safeguards Necessary.

Sir DONALD MACLEAN said he hoped that the House would not give in anything like their entirety the powers asked for by the Ministry in Clause 10. Those powers ought to be limited specifically. It was a very serious inroad on what had hitherto been very carefully safeguarded by that House. People knew what had happened under the safeguards of the certificates of two medical men, and all the rest of it. Any handling of this subject by a Government or other department by way of extension of existing powers ought to be most carefully examined before any extension of powers was granted. The horror of sending men into lunatic asylums or mental hospitals often did the greatest possible damage to them. He suggested that the operation of this clause might be limited and not have any general application. In Clause 11 the most important and entirely novel powers were sought. He thought the Committee would do well to examine the proposals with scrupulous care. It was quite intolerable that with the extraordinary demand for hospital treatment immensely increased by the war, and with the lack of the normal increase of accommodation which would have been provided if there had been no war, anyone should suffer. This question of the prevention and cure of disease required immediate attention. It was ridiculous that while there was a voluntary hospital in a town or district overcrowded and with a long waiting list, there should at the same time be some hundreds of yards or half a mile away a well-equipped institution not fully utilised. He had been to many of the Poor-law infirmaries and the great majority of them compared very favourably with most voluntary hospitals. He was glad that the power given to county councils to set up new hospitals was entirely abandoned. Let them face the fact, however, that to grapple adequately with the development of preventive and curative treatment throughout the country voluntary effort alone did not meet the case.

Lord HUGH CECIL thought that the hospital question should have been dealt with on a larger scale and in a separate Bill if dealt with at all. As regards the proposals on the subject of lunacy, he thought there was great need for the reforms which were touched on in the clause and for many other reforms affecting lunacy, but the great reform that was needed was that the people who were confined by reason of mental deficiency or derangement should pay their expenses and no more, and it should not be lawful to make a profit out of any form of disease, and certainly not out of mental infirmity, because the tendency was so overwhelming not to cure the patient, but to treat him very kindly and to keep him where he was. This clause merely touched in a most half-hearted way the whole subject, and so far as it did touch it he thought it did so in a most dangerous way. It was with reluctance that he would vote against the Bill, but he was sure that it would do an enormous amount of good to the public service if they rejected the Bill or any Bill of that kind.

Mr. G. LOCKER-LAMPSON said the Minister of Health was the most lavish, the most uncontrollable, and the most inveterate spender of public money on the Government Bench. This Bill was the commencement of a series of the most expensive and far-reaching so-called social reforms the country had ever seen. Before they agreed to this scheme they ought to know what were the right honourable gentleman's intentions with regard to the report which suggested a complete alteration of the Poor-law, and also to the report of the Consultative Council which dealt with the whole future conditions of medical service. If Earl Winterton divided against the Bill he would support him in the Lobby.

Sir R. ADKINS said, as one with some inside knowledge, being associated with local authorities, and also being chairman of the Consultative Council at the Ministry of Health, he did not agree with Mr. Locker-Lampson that the proposals in the Bill were merely, or at all, preliminary to, or had any necessary connexion with, large schemes of public health such as that developed in the famous Medical Report of Lord Dawson's Committee, or the other scheme to which the honourable Member referred. Most of them were perfectly willing to go slowly in this matter. The great scheme of Lord Dawson's Committee was a counsel of perfection, and his view of public health was exclusively a medical point of view. If the country were as wealthy as before the war he said frankly that a good deal of that experiment ought to be tried, but as the country was to-day there should not be any attempt at a larger expenditure in the present state of the national finances. It was because a large part of the Bill was wanted, and was economical and necessary, that he could not vote against the second reading.

The debate was adjourned.

Regional Boards and Neurasthenic Patients.

Mr. ORMSBY-GORE asked the Minister of Pensions whether he had recently been receiving complaints regarding the treatment by regional boards of cases of ex-soldiers suffering from neurasthenia; whether he was aware that men suffering from periodic outbreaks of acute neurasthenia and collapse had been marked fit for work by regional boards and, on attempting to work in machine shops, had proved a danger to themselves and their fellow workers; and whether he will issue instructions to all regional directors to take greater care in dealing with these cases, and to follow up such men's medical history more carefully.—Mr. MACPHERSON replied: Complaints regarding the treatment of neurasthenics by medical boards are occasionally received and have in every instance proved on investigation to be without foundation. I have no information that would in any way support the suggestion in the second part of the question, but if my honourable and gallant friend will let me have particulars of any specific cases he has in mind I shall be glad to inquire into them at once. Instructions have already been issued to medical boards pointing out the difficulties attending the examination of neurasthenics; and the members of the special boards which examine these cases are selected, not only for their knowledge of this particular disease, but also for their tact and consideration in dealing with this type of pensioner.

The Period of Pension Assessment.

Captain LOSEBY asked the Minister of Pensions if he was aware that the present practice of calling up disabled soldiers before incessant boards was causing great irritation and frequent injustice; and if the time had come to instruct boards to fix pensions for periods of not less than 12 months, and, in cases of permanent disablement, finally.—Mr. MACPHERSON replied: Medical boards are already instructed to make assessments for as long periods as possible; and a recent analysis of the position showed that over 80 per cent. of the current assessments were not due for revision for at least 12 months. Permanent assessments are given so soon as the disability has clearly reached a final and stationary condition.

Medical Officers Recognition.

Mr. ALFRED T. DAVIES asked the Minister of Pensions whether he had considered the practicability of recognising qualified medical men who were at present attached to ex-Service men's organisations.—Mr. MACPHERSON replied: I have considered this proposal, but I am not prepared to accept it.

Economy and Reorganisation at Pensions Ministry.

Mr. ALFRED T. DAVIES asked the Minister of Pensions whether there had been any reorganisation of the office of his Ministry during the past three months; whether any economy in personnel or cost had resulted; and, if not, whether it was proposed to undertake any reorganisation within the coming three months.—Mr. MACPHERSON replied: There has been no general reorganisation of the Ministry during the past three months, but the question of effecting economies is under constant and careful consideration. Apart from the staff employed in hospitals and institutions which are concerned with the care and treatment of disabled men, and represent additional work which has been, and is being, gradually taken over from the War Office, the staff of the Ministry has been decreased during the past three months by 506, and further reductions are in prospect.

Meat-supplies and Public Health.

Major WHELER asked the Food Controller why, in setting up the Departmental Committee to consider and report on the legislative and administrative measures necessary to secure adequate protection for the health of the people in connexion with the slaughter of animals and the distribution of meat for human consumption in England and Wales, no practical agriculturalists had been put on; and whether he would add to the Committee persons having practical agricultural knowledge.—Dr. ADDISON replied: Questions primarily affecting the agricultural interests did not appear to me to come within the scope of this Committee's deliberations. The Minister of Agriculture is, however, represented on the Committee, and I have no doubt that the Committee will be glad to receive any material evidence bearing on the questions covered by their terms of reference which agricultural organisations desire to submit. I do not think at this stage of its proceedings it is practicable to add fresh members to the Committee.

Condensed Milk Standard.

Mr. GRATTAN DOYLE asked the Minister of Health what progress had been made by the Committee set up to inquire into the determination of a standard for condensed milk; if he would take immediate steps to prevent the importation or manufacture of condensed milk of low standards of fat to the detriment of the consumer if the Committee had yet reported; and, if not, would he state the reason for delay.—Dr. ADDISON replied: I have received the Committee's report, and I am considering the question of issuing regulations to give effect to their recommendations.

Campaign against Typhus.

Mr. KILEY asked the Prime Minister what was the substance of the Report of the campaign against typhus which was presented by the Secretary-General of the League of Nations Council at the meeting just held at Brussels.—Mr. BALFOUR (Lord President of the Council) replied: I am sure it would be quite impossible, and, if possible, quite improper, to attempt to summarise the documents embodying the results arrived at by the Council of the League of Nations at Brussels. Those documents will be published in full by the "Official Journal" of the League of Nations when that comes out. No doubt before that time arrives we in this country will have received from the Secretariat authentic copies of all these documents, and as soon as they arrive I propose that they should be placed in the Library of the House of Commons. Whether in addition it will be necessary or desirable to publish them separately as a Parliamentary Paper it is hardly for me to determine, but from the point of view of the League of Nations there is no objection to any degree of publicity which can possibly be given to these documents, but they cannot be summarised. The removal of the headquarters staff from London to Geneva may cause some delay, but I do not think it will be very long.

Purchase of Spirits in Small Quantities.

Lieutenant-Colonel Sir FREDERICK HALL asked the Prime Minister whether he was aware that in pre-war days persons requiring a small amount of spirituous liquor were able to purchase the same and take it to their own homes for consumption; whether, according to the present regulations, it was impossible for a small consumer to purchase anything less than a bottle of whisky or brandy unless furnished with a medical certificate; and whether, considering that promises had been made to do away with the restrictions of the Defence of the Realm Acts, steps will at once be taken to rescind this regulation in order that the liberties of the people in this matter might again be restored to them.—Mr. FISHER (Minister of Education) replied: The facts are substantially as stated in the first two paragraphs of the question. The regulation referred to is part of a code with which the Government have repeatedly said it is undesirable to interfere fundamentally pending further provision by Parliament on the general subject.—Sir F. HALL: Will the Committee which is now sitting have this question before them, and, if so, when does the right honourable gentleman expect that any report will be presented to the House?—Mr. FISHER: I understand that the reference to the Committee is restricted to the question of Sunday closing.—Sir F. HALL: Are we to take it that it is to be a permanent regulation that a man shall not be allowed to go to a public-house to purchase what he wants and take it home for his own consumption?—Mr. FISHER: There is no permanent regulation. We hope that Parliament will soon have an opportunity of reviewing all these regulations.—Mr. MACQUISTEN: Is the right honourable gentleman aware that there is a growing practice of people clubbing together, buying wholesale, and dividing it with one another, and is not that an abuse?—No answer was given.

TUESDAY, NOV. 9TH.

MINISTRY OF HEALTH BILL.

The debate on the second reading of the Ministry of Health (Miscellaneous Provisions) Bill, and on the motion for rejection of the Bill by Lord WINTERTON, was resumed.

Lieutenant-Colonel NATHAN RAW said the Bill was one of first-class importance to the community. As a medical man who had a fairly large experience in the treatment of lunacy he welcomed Clause 10, which in its general principles was a much-needed reform, though some modifications might have to be made in it in Committee. Prevention was better than cure. He could assure the House that a great number of people are certified as lunatics and sent into ordinary asylums who need never go there, and who might have been spared the stigma of being certified as insane by a few weeks or months of treatment such as was indicated under this clause. As the law stood at present this was not possible, at least, for the working classes. A great many poor women suffered from mental aberration as a result of childbirth. They required very careful supervision and very special nursing. This could not be done in a cottage. The only thing to do was to send the case to an asylum. Other cases arose out of alcoholism, pneumonia, influenza, and Bright's disease. Most of those people could make a complete recovery in the course of a few weeks or months if they could have the advantage of treatment which was provided under the clause. War had shattered the nervous system of many thousands of our soldiers. Very few were insane. They were suffering from neurasthenia and nervous collapse, which in a few weeks or months might be cured. He should like to see special mental wards attached to all general hospitals in which the cases of soldiers suffering from shell shock and mental disturbance and in the early stages of mental disease could be treated. The clause was entirely voluntary. In some cases the patient would not be able to give his consent, and he suggested that in those cases the nearest relative might act. He also suggested that the recommendation of one medical man should be sufficient. Dealing with Clause 11 Colonel RAW said the Poor-law had provided a great mass of hospital treatment for the people of this community which ought to have been undertaken by the health authorities of the country. Poor-law infirmaries were now out of date, not because they were inefficient, but on account of the vast improvement in the social and economic conditions of the people. Local authorities were setting up thousands of beds for the treatment of tuberculosis in sanatoriums and for the treatment of venereal diseases. They were also providing maternity wards so that the hospitals on the rates were already in existence to the extent of about three-fourths of the total hospital accommodation. To sum up, 300,000 beds to-day were maintained at the ratepayer's expense, and 40,000 beds were provided and maintained by charitable institutions. The splendid services of these voluntary hospitals must on no account be curtailed, but must be encouraged. It was not true to say that the voluntary hospitals had failed. They had only failed because the public had failed to support them. This could be remedied by this Bill, which gave the local authorities powers to assist them. He hoped that the right honourable gentleman would insist that in all general hospitals in future beds should be reserved for maternity cases. He estimated that out of 95,000 beds at present in Poor-law infirmaries only about 30,000 would be suitable for the requirements of a modern hospital, so that when the Poor-law was abolished there would be a considerable shortage, which would have to be made up. He sincerely regretted that the Minister of Health was not insisting on the subsection which gave powers to the health authorities to erect and maintain hospitals, because without that subsection the provision was a makeshift. Something would have to be done in the very near future to provide, maintain, and equip more hospitals in this country. The alternative to that was that all the present voluntary hospitals should be considerably extended. He thought it would be wise if all voluntary hospitals were enlarged, or even doubled in size, and given a subsidy to assist them in providing more beds. Every person who used a hospital should pay according to his means. Those who could not

pay should be maintained in municipal hospitals at the expense of the State. The health of the nation was much too precious and too serious a matter to be left to private effort. The present hospital system in England was inadequate and out of date. At the General Election he pledged himself that they were going to make a C 3 nation into an A 1 nation. He could not understand the action of any Member who rejected these valuable reforms on the ground of expense.

Lieutenant-Colonel FREMANTLE said part of Clause 10 was very difficult to support, and yet if they really went into the actual cases which it was meant to meet it was impossible to resist it. The London County Council felt that it was a contribution, and only a small contribution, to the solution of the problem of dealing with the cases of mental deficiency and disorder in their early stage. The main objection to the whole question from the professional standpoint was that they were dividing what was essentially one. The problem of mental disorder ought to be treated as a whole. As regarded Clause 11 he hoped that, if there were to be contributions to hospitals from the rates, at the same time there would be an equivalent grant from the Treasury. He entered a plea against the economists. The question of economy must be raised in relation to other Bills. Here they were fighting a warfare quite as deadly as was fought in the late disastrous war and at an expense very very small indeed compared with the cost of the war.

Dr. ADDISON, replying to the debate, said he was unable to find in the Bill any proposals which would lead to the pouring out of money like water, which had been so often referred to in the debate. At the same time he was most willing to join with Members when the Bill was in Committee in avoiding any liability which public interest did not want. As to the proposal to enable local authorities to contribute to the support of voluntary hospitals he had a list of 34 such bodies which promoted and passed through Parliament private Bills to enable them legally to make such contributions. In a statement calling attention to the condition of the London Hospital Lord Knutsford mentioned that 900 people were waiting to come into the hospital, and there were 200 empty beds in Whitechapel Infirmary. The reason people did not go to the Poor-law institutions was that the Poor-law authorities could only give relief to persons who were destitute. He could not ignore the needs of the people.

Major MOLSON said as a medical man he was very sorry to have to oppose the Bill. His chief objection was the very severe financial liabilities which the right honourable gentleman was placing on the country. They had been asked to try and convert a C 3 population into an A 1 population, and he thought by curative and preventive medicine and public health measures this might have been done. The Minister of Health had been burdened with measures which might have been carried out by private enterprise.

The motion for rejection of the Bill was negatived by 156 votes to 76 and the Bill was then read a second time.

Army Medical Officers Placed on Half Pay.

Captain ELLIOT asked the Secretary for War whether he was aware that several Regular Army Medical Service officers with distinguished war records had recently been placed on half pay against their desires; that junior ranks were meanwhile forbidden to resign their commissions on account of the shortage of medical officers; that one officer who was promoted colonel for service in the field and subsequently received the D.S.O., the C.M.G., the C.B., and the French Croix de Guerre, with two palms and star, had been placed on half pay six years before the age limit for his rank; and whether he would institute an inquiry into these cases.—Sir A. WILLIAMSON (Parliamentary Secretary to the War Office) replied: The procedure on reduction of establishment as laid down in Article 308 of the Royal Warrant for pay, &c., has been followed in these cases. It would explain that the number of colonels in the Army Medical Service is largely in excess of the establishment, whereas among the junior ranks there has been a shortage owing to the large number of temporary officers demobilised and to the demand for medical officers for service overseas. Until recently it was, therefore, impossible to permit the retirement of such officers, but this is now no longer the case.

Washington Maternity Convention.

Mr. GEORGE BARNES asked the Minister of Health if he was yet in a position to make any statement of the Government policy regarding the Washington Convention re maternity; and if, in any case, he would submit the Convention to the judgment of the House.—Dr. ADDISON replied: The Ministry of Health have reported on this matter; but certain questions have arisen on points which are outside the jurisdiction of the Ministry of Health, and the Government are not yet in a position to make a statement.—Mr. BARNES: May I ask for a reply to the last part of the question, whether the right honourable gentleman will sometime submit the Convention to the judgment of this House, and is he aware of the extreme impatience of women's organisations in this country in consequence of the long delay in bringing this matter before the House?—Dr. ADDISON: I know there is a good deal of impatience on the part of the people concerned as to an opportunity for discussion, and perhaps my right honourable friend will put down a question on the subject to the Leader of the House.

Maternity and Child Welfare Act, 1918.

Mr. ROBERT YOUNG asked the Minister of Health if he would state how many local authorities had and how many local authorities had not made arrangements under Section 1 of the Maternity and Child Welfare Act, 1918.—Dr. ADDISON replied: The following local authorities have made arrangements under Section 1 of the Maternity and Child Welfare Act, 1918: (*a*) All the 29 metropolitan borough councils (including the Common Council of the City of London); (*b*) all the 82 county borough councils in England and Wales; (*c*) all the 62 county councils in England and Wales, except the London County Council, which has no powers under the Section, and the Glamorganshire County County; (*d*) the councils of 306 of the 1703 sanitary districts in England and Wales, including most of the large non-county boroughs and urban districts. Of the remaining 1397 sanitary districts 1390 are included in county councils' schemes, and are covered by arrangements made under such schemes. The seven districts in which no arrangements have been made or are being made are small urban and rural districts.

Medical Insurance Service.

Mr. HANCOCK asked the Minister of Health if he would give the names of the four medical supervisors that had been recently appointed, and would he give the names of their respective districts and the amount of salary that was paid to each of them.—Dr. ADDISON replied: The four divisional medical officers appointed in connexion with the new Medical Insurance Service are as follows: Dr. A. Fulton, M.B., North-Western Division, net inclusive salary £1600 a year; Dr. C. H. Milburn, O.B.E., M.D., North-Eastern Division, £1600; Dr. H. J. Neilson, C.B.E., M.D., Southern Division, £1600; Dr. R. E. Crosse, M.R.C.S., Metropolitan and Eastern Division, £1600.

Medical News.

UNIVERSITY OF OXFORD.—**The Radcliffe prize**, value £50, will be awarded by the Master and Fellows of University College upon the report of the examiners, provided a sufficiently deserving memoir be submitted for a memoir, or papers, embodying research in any branch of medical science comprised under the following heads: Human anatomy, physiology, pharmacology, pathology, medicine, surgery, obstetrics, gynæcology, forensic medicine, hygiene. The prize is open to all graduates of the University who have proceeded, or are proceeding, to a medical degree in the University. Candidates, at the date of application, shall not be Radcliffe Fellows; but the provision that candidates shall not have exceeded 12 years from the date of passing the last examination for the degree of B.A. is upon this occasion so far suspended as to enable any graduate, who was eligible during the years of the war (1915, 1917, 1919), to be eligible for the next ensuing award (1921). No memoir for which any university prize has been already awarded can be admitted to competition, nor may the prize be awarded more than once to the same candidate. Candidates are required to send their memoirs to the assistant registrar on or before Dec. 1st, 1920.

UNIVERSITY OF LIVERPOOL.—**A Diploma in** Medical Radiology and Electrology has recently been instituted. A six months' course of post-graduate work is required before a candidate can enter for the examination, and instruction in physics constitutes part of the course. Mr. C. Thurstan Holland has been appointed a university lecturer in charge of the department of radiology.

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the Final Examination of the Conjoint Board, held from Oct. 12th to 27th, the following candidates were approved in the undermentioned subjects, but are not eligible for diplomas:—

Medicine.—H. N. Andrews and G. K. Arthur, St. Bart.'s; S. H. Barnett, Cambridge and St. Thomas's; Martha Florence Barritt, Manchester; D. E. Bedford, Middlesex; Margaret Gladys Best, St. Mary's; G. C. Bhatia, Liverpool; L. M. Billingham, St. Bart.'s; Ivy Collier, St. Mary's; A. G. Duncan and R. T. Edwards, London; E. W. Evans, Birmingham; H. Freeman, Westminster; Katherine Mary Lovell Gamgee, Univ. Coll.; P. P. Gandhy, Bombay and St. Mary's; H. H. Gleave, Leeds; B. Gould, London; Katharine May Harbord, Royal Free; J. W. Hulme, Middlesex; Violet Mary Jewson, Manchester; J. G. Johnstone, St. Bart.'s; D. E. Jones, Cardiff and St. Bart.'s; D. M. Jones, Univ. Coll.; G. W. Karunaratna,

Cambridge and Middlesex; M. Korn, London; F. G. Latham, Liverpool; F. Lawrence, London; J. H. Le Brasseur, Cambridge and St. Bart.'s; Anna Gwenllian Mary Lewis and C. A. Lindup, Univ. Coll.; H. D. Llewellyn, St. Bart.'s; C. G. Martin, Cambridge and St. Bart.'s; A. Mikhail, Guy's; Sybil Grace Mocatta, St. Mary's; B. S. Mote, Bombay and Middlesex; T. L. Ormerod, St. Bart.'s; E. F. Peck, Liverpool and St. Bart.'s; Mary Winifred Pitt-Lewis, St. Mary's; Ruth Wade Plimsoll and Betsy Porter, Royal Free; C. S. C. Prance, St. Bart.'s; S. A. H. Qureshi, Univ. Coll.; P. L. Richardson, Guy's; Margaret Scott-Moncrieff, Univ. Coll.; N. L. Sheorey, Bombay and London; W. F. Skaife, Oxford and St. Bart.'s; E. Tagoe, Univ. Coll.; H. B. Taylor, St. Mary's; L. J. Timings, Birmingham; T. W. Turner, Guy's; Mary Gwendolen Vaughan, King's Coll.; J. F. Weakley, Univ. Coll.; Agnes Edie Westwood, St. Mary's; D. C. Williams, London; Muriel Burton Williams, Royal Free; and Greta Isabel Yeoman, St. Mary's.

Midwifery.—T. Adam, St. Bart.'s; D. R. Ainsworth, Manchester; Doris Elizabeth Alcock and K. H. N. Attaoullah, Royal Free; O. A. Baker, Univ. Coll.; F. G. L. Barnes, St. Bart.'s; K. M. Bharucha, Bombay; J. R. S. Bowker, Middlesex; J. G. B. Brass, St. Louis, U.S.A.; C. S. Cloake and E. C. T. Clouston, London; Ivy Collier, St. Mary's; I. J. Corbett, London; A. M. Cotes, Leeds; P. Couacoud, Guy's; J. G. D. Currie, St. Thomas's; J. R. Dow, Charing Cross; Eileen Dowling, Liverpool; C. F. T. East, Oxford and King's Coll.; M. H. Eid and G. W. Elkington, Guy's; E. St. C. Gainer, Middlesex; J. H. Gann, London; H. H. Gleave, Leeds; Marjorie Pearl Christine Greene, Royal Free; W. R. W. Haight, Toronto; B. O. Hancock, Birmingham; Katharine May Harbord, Royal Free; Marjorie B. Hubert, St. Mary's; E. R. Hughes, London; S. H. G. Humfrey, St. Thomas's; A. V. Johnson, Cambridge and Birmingham; J. T. Jones, Guy's; M. Kamil, Middlesex; Mary Elizabeth Kennedy, London; A. Kotbi, St. Mary's; W. Laing, St. Bart.'s; Anna Gwenllian Mary Lewis, Univ. Coll.; C. G. Lewis, Birmingham and Univ. Coll.; C. J. Lewis, Birmingham; W. B. A. Lewis, Cambridge and St. Bart.'s; Margaret Longbottom, Royal Free; O. E. J. McOustra, Univ. Coll.; P. Nadan, Liverpool; Henrietta Alexandrina Clark Main, St. Mary's; R. Mikhail, Charing Cross; Anna Miller, Royal Free; Sybil Grace Mocatta and Iva Clare Marion Molony, St. Mary's; J. C. R. Morgan, Westminster; L. S. Morgan, St. Bart.'s; J. B. G. Muir, Middlesex; R. E. Murray, Calcutta; H. W. L. Nichols, London; Helen O'Brien, St. Mary's; M. M. Ostrowick, Edinburgh; A. Pain, Middlesex; E. Philbin, Manchester; F. A. Phillipps, Cambridge and St. Thomas's; W. S. Ratnavale, London; H. L. Rayner, King's Coll.; A. M. Reid, Liverpool; J. Reith, Univ. Coll.; J. J. Rowlands, London; Margaret Scott-Moncrieff; Univ. Coll.; A. Sebba, London; S. Sedaros and A. H. Shelswell, Guy's; M. Shernovitch and Doris Kathleen Shuttleworth, Leeds; O. L. C. Sibley and A. I. Silverman, Middlesex; H. L. Slaughter and L. Smalley, St. Thomas's; J. A. Stephens, Leeds; L. W. Studdy, Durham; S. Suvansa, St. Bart.'s; R. O. Swaine, Middlesex; C. P. Thomas, Westminster; G. D. C. Tracy, Cambridge and St. Thomas's; Gladys Mary Wauhope, St. Andrews and London; Beryl Wiseham, Calcutta and London; and J. E. Wright, Guy's.

Surgery.—C. H. Andrewes, St. Bart.'s; H. J. Bhatia, Bombay; J. L. McK. Brown, St. Bart.'s; Mary Burfield, St. Mary's; C. L. C. Burns, St. Thomas's; D. S. Chamberlain, King's Coll.; L. C. F. Chevens, St. Thomas's; G. I. Griffiths, Liverpool; A. B. Hacking, Middlesex; A. Y. Ibrahim, St. Thomas's; Mary Elizabeth Kennedy, London; Helen O'Brien, St. Mary's; T. Laura Pires, Charing Cross; Olive Gwendoline Potter, London; O. A. L. Roberts, St. Mary's; Mary Frances Roope and A. R. Roushdy, Charing Cross; C. I. Schiff, London; M. Shernovitch, Leeds; E. E. A. Spencer, Charing Cross; H. Spibey, Univ. Coll.; Y. A. Sumbul, St. Mary's; J. S. Thomas, London; Madeline Hilda Jane Umpleby, St. George's; W. G. D. H. Urwick, St. Bart.'s; Gladys Mary Wauhope, St. Andrews and London; E. A. Widdowson, Otago; H. L. Willey, St. Thomas's; and Muriel Burton Williams, Royal Free.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.—At the stated business meeting of President and Fellows of the College, held on Nov. 5th, Dr. Joseph Theodore Wigham and Dr. John Speares were admitted Fellows of the College, and Dr. A. F. Bernard Shaw was admitted a Member and Licentiate.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—The annual meeting of the Faculty took place on Nov. 1st. Among the office-bearers appointed were the following:—President: Dr. A. Freeland Fergus. Visitor: Dr. W. G. Dun. Treasurer: Mr. George McIntyre. Honorary librarian: Dr. E. H. L. Oliphant. Councillors: the President, the visitor, the treasurer, the honorary librarian, Dr. James A. Adams (Representative to the General Medical Council), Mr. J. McGregor Robertson, Mr. J. Forbes Webster, Mr. R. M. Buchanan, Dr. Ebenezer Duncan, Dr. W. R. Jack, Mr. Henry Rutherfurd, and Dr. A. K. Chalmers.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.—The next quarterly meeting of the Association will take place on Thursday, Nov. 25th, at 11, Chandos-street, Cavendish-square, W., under the presidency of Dr. W. F. Menzies, at 2.45 P.M. On the morning of the same day and at the same place there will be a meeting of the Handbook, Educational, and Parliamentary Committees, while the Council will meet from 12 noon to 12.30 P.M. and 1.30 to 2.45 P.M. There are many new members for election, and members are reminded that from Jan. 1st, 1921, the annual subscription will be raised to £1 11s. 6d.

MEDICAL MAYORS.—Dr. A. J. Rice-Oxley has been elected mayor, for the second year in succession, of the Royal Borough of Kensington.—Mr. E. A. Farr, J.P., M.R.C.S. Eng., L.R.C.P. Lond., who has held the office of medical officer of health, Andover, for 26 years, has been elected mayor of Andover for the ensuing year.

ROYAL ANTHROPOLOGICAL INSTITUTE.—The Huxley Memorial Lecture of the Institute will be delivered on Tuesday, Nov. 23rd, in the lecture room of the Royal Society, Burlington House, W., at 8.30 P.M., by Mr. A. C. Haddon, Sc.D., F.R.S., upon Migrations of Cultures in British New Guinea.

ROYAL SOCIETY OF ARTS.—The arrangements for the winter session include a lecture on Colour-vision and Colour-blindness by Dr. F. W. Edridge-Green on Nov. 24th, and three Cantor Lectures on Micro-organisms and Some of their Industrial Uses, by Mr. A. Chaston Chapman, F.R.S., on Nov. 29th and Dec. 6th and 13th respectively. The lecture hour in all cases is 8 P.M.

NORTH-EAST LONDON POST-GRADUATE COLLEGE.—A special post-graduate course will he held at the Prince of Wales's General Hospital, Tottenham, London, N., from Dec. 6th to 18th. Those wishing to attend should apply not later than Dec. 2nd to the Dean at the hospital or to the Secretary of the Fellowship of Medicine at 1, Wimpole-street, London, W. 1.

LONDON DERMATOLOGICAL SOCIETY.—A meeting of this society will be held at 4.30 P.M. on Nov. 16th, at St. John's Hospital, 49, Leicester-square, London. Clinical cases will be shown by Dr. W. Griffith, Dr. Dennis Vinrace, Dr. M. G. Hannay, Dr. W. K. Sibley, Dr. E. J. D. Mitchell, and Dr. S. R. Kapoor, and the Presidential Address, on Some Autoinfections, will be delivered by Dr. R. Prosser White.

THE COUNCIL OF THE ROYAL SOCIETY.—The following have been recommended by the President and Council of the Royal Society for election to the Council:—President: Professor C. S. Sherrington. Treasurer: Sir David Prain. Secretaries: Mr. W. B. Hardy and Mr. J. H. Jeans. Foreign Secretary: Sir Arthur Schuster. Other members of Council: Mr. J. Barcroft, Sir William Bragg, Dr. A. W. Crossley, Professor J. B. Farmer, Sir Walter Fletcher, Professor A. Fowler, Dr. A. C. Haddon, Sir Robert Hadfield, Sir Thomas Heath, Professor J. Graham Kerr, Professor H. Lamb, Sir William Leishman, Dr. S. H. C. Martin, Professor J. W. Nicholson, Mr. R. D. Oldham, and Professor W. P. Wynne.

DEPTFORD COUNCIL FOR YOUTH.—Surgeon Commander K. Digby Bell, R.N., will lecture on Recreation in the Navy during the War and its Application to Civil Life on Friday, Nov. 19th, at the Town Hall, Deptford. The lecture is an outcome of Commander Bell's address to the Royal Society of Medicine, published in THE LANCET of Jan. 31st last, on a scheme for National Physical Education, and has been arranged by the Recreation Committee of the Deptford Council for Youth. Admission is free, but tickets for reserved seats at 1s. each may be obtained from Dr. Rosa Ford, the honorary secretary, 21, Jerningham-road, New Cross, London, S.E. 14.

SAVE THE CHILDREN FUND.—A meeting on behalf of this fund was held at Whitelands College, Chelsea, recently, when Professor F. F. Roget gave an address on Child Welfare. He pointed out that the child is international rather than national, and the life of the child could be roughly divided into three periods, those of the family, the school, and industry. During school life the State stepped in to develop the hygienic conscience of the child. In industrial life, unfortunately, the prevailing economic system was pressing the blood out of human life through overwork. Child life should not be wasted in industry. The child welfare section of the Red Cross, added Professor Roget, was prepared to supply all requirements dealing with child welfare. Miss Geraldine Cooke followed with a speech on the work of the Save the Children Fund, the fundamental basis of which, she said, was that every child should be given a fair chance. Eighteen months ago two women were impressed by the extreme misery in Vienna and conceived the project of raising £1000. The work spread to all parts of the stricken areas, and there were now 300 active branches in Great Britain and an international organisation working in close touch with the International Red Cross. There were Save the Children Fund associations working in France, Germany, Italy, Sweden, Switzerland, and Spain, and others in process of formation in Turkey, Armenia, Serbia, and Bulgaria. There had been lately a strong feeling that this work, though created for an emergency, should become truly international and that a project for helping British children should be realised. The Fund had therefore put its organisation at the disposal of this country.

Dr. Noel Bardswell has been appointed a member of the consulting staff of the King Edward VII. Sanatorium.

THE dinner of the West London Hospital and Post-Graduate College, which was to have been held to-day, Saturday, Nov. 13th, has been postponed.

HORSLEY MEMORIAL.—**At a meeting of the** executive committee, held on Nov. 10th, it was decided to issue at once, and as widely as possible, an appeal for a fund to found a Research Scholarship or Lectureship.

RONTGEN SOCIETY.—**A general meeting will be** held on Thursday, Nov. 18th, at 8.15 P.M., in the Physics Lecture Theatre, University College, Gower-street, London, W.C., when Dr. Robert Knox will deliver the presidential address.

WELLHOUSE HOSPITAL, BARNET (HERTS.)—**The** inaugural ceremony will take place on Tuesday, Nov. 16th, when Viscount Hampden, Lord-Lieutenant of Hertfordshire, will open the hospital.

THE CLAIMS OF EX-SERVICE DOCTORS.—**At the** meeting of the Aberystwyth Town Council on Tuesday last a communication was received from the Ministry of Health enclosing copy of a letter which Dr. Addison had directed to be forwarded to the local board of guardians respecting the recent appointment of a medical officer to fill the vacancy caused by the death of Dr. Bonsall. The town guardians unanimously supported Dr. Abraham Thomas, who served in the war from 1914 to 1919, but the county guardians went dead against him and appointed Dr. J. A. Rees. The letter stated:—

"Dr. Addison desires me to draw the attention of the Guardians to the circular letter, dated 11th Sept., 1919, with regard to claims of competent ex-Service men to appointments under local authorities, and to state that notwithstanding the prolonged good services with which the Guardians credit Dr. Rees, he feels the Guardians would be better advised to reconsider the nomination which they have made. The country has a right to expect that efforts will be made to find a suitable ex-Service candidate for such a vacancy, and it must be recognised that public bodies had a special responsibility in this matter."

Dr. Thomas acted for Dr. Bonsall during the latter's illness, and has resided in the town all his life. The proceedings at a public meeting held on Sept. 30th protesting against the rejection by the Aberystwyth Guardians of Dr. Thomas's claims were reported in THE LANCET of Oct. 9th (p. 770).

SOCIETY OF MEMBERS OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.—**The annual general meeting of** the Fellows and Members will take place at the College, Lincoln's Inn-fields, W.C., on Thursday, Nov. 18th, at 3 P.M., when the following resolutions will be sent in on behalf of the society:—

1. That this thirty-fifth annual meeting of Fellows and Members again affirms the desirability of admitting Members to direct representation on the Council of the College, which (as now constituted) only represents those Members who also hold the Fellowship; and that it does so in order that the constitution of the Council of the Royal College of Surgeons of England shall be in keeping with modern ideas of true representation.

This will be moved by Dr. J. Brindley-James, the President of the society, and Dr. F. W. Collingwood.

2. That as the Royal College of Surgeons is composed of about 17,579 persons, of whom over 16,000 are engaged in general practice, this annual meeting requests the President and Council to nominate at least two Members in general practice to represent the interests of general practitioners in the management of College affairs.

Dr. S. C. Lawrence, Dr. A. Keppel Barrett, and others will speak thereon.

The annual subscription to the society is 2*s.* 6*d.*, or a life payment of £1 1*s.*, can be sent to the honorary secretary, Mr. Sidney C. Lawrence, 61, Wellington-road, Bush Hill Park, Enfield.

ALVARENGA PRIZE OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.—It is announced that the next award of this prize, amounting to about $250, will be made on July 14th, 1921, provided that an essay deemed worthy of the prize shall have been offered. Each essay must be sent without signature, but must be plainly marked with a motto and must be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the College; other essays will be returned upon application within three months after the award. No Alvarenga prize for 1920 was awarded. Essays intended for competition must be typewritten and may be upon any subject in medicine, but must not have been published. If written in a language other than English they should be accompanied by an English translation and should be sent to the Secretary of the College, at 19, South Twenty-second Street, Philadelphia, Pa., U.S.A., so as to arrive on or before May 1st, 1921.

PROPOSED BRUSSELS CONGRESS OF MILITARY MEDICINE AND CHEMISTRY.—The Sanitary Service of the Belgian Army is organising a congress of military medicine and chemistry to be held in Brussels in June, 1921, to which all doctors and chemists who served in the allied or neutral armies are invited. The following subjects will be placed on the programme: (1) The lessons of the war in the treatment of fractured limbs. (2) The fight against venereal disease and tuberculosis in the army. (3) Chemical and physiological study of gas in warfare; sequelæ of its action on the organism; importance of these sequelæ in estimating incapacity. (4) General organisation of medical services in armies. Those wishing to attend the congress should communicate, before April 1st, 1921, at latest, with the secretary-general, Dr. Jules Voncken, Military Hospital, Liége, Belgium. Any reports sent in should be accompanied by a short summary.

BRISTOL MEDICAL SCHOOL AND GUARDIANS' HOSPITAL.—At the Southmead Hospital, to which the Bristol guardians recently appointed a consulting staff, demonstrations on selected cases will be held every Saturday morning by Dr. J. A. Nixon, consulting physician to the hospital, for senior students of the Bristol Medical School.

CREMATION IN MANCHESTER.—**The annual report** of the Manchester Crematorium, Ltd., states that the total number of cremations since the opening in 1892 is 3187. For the last five years the numbers have been as follows: 1916, 149; 1917, 199; 1918, 168; 1919, 238; 1920, 219. The decrease during last year is attributed to the fall of the death-rate. A balance of £572 is recorded for this year.

A RADIUM HOSPITAL FOR MANCHESTER.—As briefly announced in THE LANCET last week, Sir Edward and Lady Holt have made a timely and generous gift to the Manchester Radium Institute of Nelson House Nursing Home, which is in close proximity to the Royal Infirmary and Eye Hospital, as a hospital where patients requiring treatment by radium can be treated and housed. The hospital is freehold and will be handed over completely furnished and ready for use. Manchester does not share alone in this gift, for besides the Royal Infirmary the boards of management of the following hospitals will also participate with the Radium Institute: Salford Royal Hospital, Ancoats Hospital, St. Mary's Hospital for Women, Northern Hospital, Hospital for Diseases of the Skin, Christi Hospital, and Bury Infirmary. This will be the first hospital in the kingdom used exclusively for treatment by radium; moreover, since there are 30 beds in the new institute, patients will not be distributed amongst eight different institutions, as at present, though it will still be possible to treat patients at other hospitals if required. Manchester has spent already nearly £30,000 for its stock of radium; up to the present the institute has been self-supporting, through the fees paid by private patients. With the opening of the new Radium Hospital and the upkeep of beds the public will have to help if they are to reap the full benefit from this magnificent gift.

LIVERPOOL MEDICAL INSTITUTION.—**The first** meeting of the Pathological Section of this institution was held on Nov. 4th, with Dr. J. E. Gemmell, the President, in the chair. Dr. E. Cronin Lowe read a note on Metastases in Bone from a Case of Renal Hypernephroma, illustrated by coloured drawings. The secondary growths occurred in one humerus and both femora, in each case causing spontaneous fracture. Death occurred 11 years after the initial symptom of hæmaturia. Unfortunately the post-mortem was only a partial one and the primary growth was unobtainable. The secondary growths, however, showed the typical arrangement of cells as seen in a renal tumour. Dr. A. D. Bigland and Dr. P. M. Bigland communicated a paper on Cerebro-spinal Fluid Examinations with special reference to neuro-syphilis, based upon 180 cases. After a brief allusion to the history of the subject, the authors discussed the procedure of lumbar puncture. They advocated the sitting posture, the use of a White-Jeanselme needle, and the mid-line insertion between the third and fourth lumbar vertebræ. The patient should remain recumbent for 24 hours after the puncture to avoid or lessen leaking of spinal fluid, which appears to be the cause of the resulting headache. Several tests were demonstrated, including Lange's colloid gold reaction, and tables were shown giving the different results of the tests in the various types of neuro-syphilis; great stress was laid upon the importance of relying only upon the combined findings of all the tests. The authors deduced the following results from their work, basing their conclusions upon post-mortem findings and clinical facts. They stated that: (1) No case having a similarity to the usual forms of neuro-syphilis should be regarded as such without laboratory proof; (2) no case with a positive serum W.R. or with a history of syphilis, together with nervous symptoms, should be diagnosed as neuro-syphilis until proved so; and (3) a negative W.R. in the blood does not exclude neuro-syphilis.

ROYAL MEDICAL BENEVOLENT FUND GUILD.—It is not necessary to remind our readers of the work which the Royal Medical Benevolent Fund has done, and is doing, in providing annuities and caring for the necessitous relatives of those medical men who in the practice of their profession have lost health or life before being able to make adequate provision for their dependents. Nor is it necessary to speak of the visiting and other personal services given by the Ladies' Guild of the Fund, which provides clothes and other necessities for those beneficiaries who are in need, and assists also in the education and technical training of the younger generation. This Guild has for ten years been a powerful auxiliary to the main beneficient work of the Fund, first under Lady Tweedy, and now under the active secretaryship of Lady Fripp, with Lady Wavertree as chairman. In order to put the Guild on a sound financial basis an effort is being made to raise £10,000 for the educational branch, and a similar sum is needed for the opening of a hostel or home of rest for the aged, and a holiday and convalescent home for the children. With these objects in view a special matinée will be given at His Majesty's Theatre, Haymarket, London, on Nov. 19th, when a first-class programme will be provided under the patronage of Her Majesty the Queen. Among others who have promised assistance are Mr. Gerald du Maurier, Mr. Owen Nares, Mr. George Grossmith, Mr. Nelson Keys, Miss Winifred Emery, Miss Fay Compton, and Miss Gladys Cooper. The prices for seats range from 1s. 3d. to £3 3s., and tickets may be obtained from the Marchioness of Crewe, 38, Berkeley-square; Lady Birkenhead, 32, Grosvenor-gardens; Lady Wavertree, Sussex Lodge, Regent's Park; or Lady Fripp, 19, Portland-place.

Appointments.

ALEXANDER, W., has been appointed Medical Officer of Health for Heywood.

LEWIS, C. J., D.Sc., M.D., F.R.C.P. Edin., Associate Professor of Public Health in the University of Birmingham.

MCGREGOR, J. R., M.B., Ch.B. Edin., Medical Superintendent at Harefield Sanatorium, Middlesex.

PEDSON, J. P., M.D. Durh., an Assistant Bacteriologist at the Lister Institute of Preventive Medicine.

PRYNNE, H. V., M.R.C.S., L.R.C.P. Lond., Chief Medical Officer to the General Post Office.

Vacancies.

For further information refer to the advertisement columns.

Bedford County Hospital.—H.S. and Asst. H.S. £180 and £150.
Belfast, Royal Victoria Hospital.—Res. Pathologist. £200.
Bethnal Green Metropolitan Borough.—M.O.'s for Maternity and Child Welfare. 1½ guineas per session.
Birmingham City Education Committee, Remedial Exercises Clinic, John Bright-street.—Orthopædic S. £3 3s. for each occasion.
Birmingham City Maternity and Child Welfare Schemes.—Female Asst. M.O.H. £800.
Birmingham General Hospital.—Res. Anæsth., H.P., and H.S. £100. Also two H.S.'s. £125.
Bradford Royal Eye and Ear Hospital.—Aural S.
Bristol Royal Infirmary.—Hon. Asst. P.
Canning Town Women's Settlement Hospital, Balaam-street, Plaistow, E.—Female Res. M.O. £150.
Carshalton, Surrey, Queen Mary's Hospital for Children.—Junior Asst. M.O. £515 6s.
Central London Ophthalmic Hospital, Judd-street, St. Pancras, W.C.—Junior H.S. £50.
Central London Throat, Nose, and Ear Hospital, Gray's Inn-road, W.C.—Registrar.
Colonial Service.—M.O.'s for West African Medical Staff, Government Service in Malaya, East African Protectorates, West Indies (including British Guiana), Fiji, and the Western Pacific, &c.
Devon County Hospital.—Asst. Sch. M.O. £500–£600.
Doncaster Royal Infirmary and Dispensary.—Asst. H.S. £225.
Durham University College of Medicine, Newcastle-upon-Tyne.—Assistant in Department of Bacteriology. £600.
East London Hospital for Children and Dispensary for Women, Shadwell, E.—Path. and Registrar. £400. Two Asst. P.'s.
Eday, Orkney.—M.O. £10 a week.
Elizabeth Garrett Anderson Hospital, Euston-road.—Female H.P., Obstet. Asst., and two H.S.'s. £50 each. Anæsth. £10 10s. Dent. S.
Evelina Hospital for Children, Southwark, S.E.—H.S. £160.
Federated Malay States Colonial Service.—Pathologist to Medical Research Institute. £1050.
Finsbury Metropolitan Borough.—Asst. M.O.H. £550.
Great Northern Central Hospital, Holloway-road, London, N.—Clin. Asst. £1 1s. per session.
Greenwich Metropolitan Borough.—M.O. for Maternity and Child Welfare. £400.
Guildford, Royal Surrey County Hospital.—Third H.S. £150.
Hospital for Consumption and Diseases of the Chest, Brompton, S.W.—Res. M.O. £500. Dent. S. 100 gs. Anæsth. 75 gs.
Hull Royal Infirmary.—Asst. V.D. and Cas. O. £250. Also Asst. H.S. £150.
Jodhpore, Rajputana, India, Jaswant Female Hospital.—Medical Woman. Rs. 450 per mensem.
Leamington Spa, Warneford, Leamington, and South Warwickshire General Hospital. Res. H.P. or H.S. £200.
Leeds City.—Asst. M.O.H. for Maternity and Child Welfare. £600.
London County Mental Hospital Service.—Sixth and Seventh Asst. M.O.'s. £300.
Londonderry City and County Infirmary.—Asst. H.S. £150.
London Lock Hospital, 91, Dean-street, W.—Hon. S.
London Temperance Hospital, Hampstead-road, N.W.—Res. M.O. £200.
Macclesfield General Infirmary.—Res. H.S. £200.
Manchester, Hulme Dispensary, Dale-street, Stretford-road.—Res. M.O. £400.
Manchester Royal Infirmary.—Three Asst. M.O.'s. £35.
Manchester, St. Mary's Hospitals for Women and Children.—H.S. £100.
Merthyr Tydfil Co. Borough.—Asst. Sch. M.O. and Asst. M.O.H. £500.
Miller General Hospital for South-East London, Greenwich, S.E.—H.P. £150.
Milroy Lectures on State Medicine and Public Health.—Milroy Lecturer.
Monmouthshire Education Committee.—Asst. M.O. £500.
Mount Vernon Hospital for Tuberculosis and Diseases of the Lungs and Heart, Northwood, Middlesex.—Asst. P.
Newcastle-upon-Tyne and Northumberland Sanatorium for Consumptives, Barrasford, North Tyne.—Med. Supt. £650.
Newcastle-upon-Tyne, Royal Victoria Infirmary.—Hon. Surgical Registrar.
Northallerton, North Riding of Yorkshire County Council Education Committee.—Asst. Sch. M.O. £500.
Norwich, Norfolk and Norwich Hospital.—H.P. and Fourth H.S. £200 each.
Nottingham General Dispensary.—Res. S. £300.
Plymouth Borough.—Asst. M.O.H. £500.
Pontypridd Urban District Council.—Female Asst. M.O. £550.
Prison Medical Service, Home Office, London, S.W.—M.O. £300.
Putney Hospital, Lower Common, Putney, S.W.—Res. M.O. £150.
Queen Charlotte's Lying-in Hospital, Marylebone-road, N.W.—Asst. Res. M.O.
Radnorshire County Council.—County M.O. and Sch. M.O. £700.
Reading, Royal Berkshire Hospital.—H.S. £200.
Rochester, Kent, St. Bartholomew's Hospital.—Jun. Res. M.O. £150.
Rochford Union Institution and Children's Home.—Temp. M.O. £7 7s. per week.
Rotherham Hospital.—Jun. H.S. £150.
Royal College of Surgeons of England.—Election to Court of Examiners.
St. Mary's Hospital, Paddington, W.—Medical Registrar. £200.
St. Peter's Hospital, Henrietta-street, Covent Garden, W.C.—Anæsth. £25.
Salford Royal Hospital.—Cas. H.S. £150.
Shanghai Municipal Council.—Asst. Health O. 6000 taels.
Sheffield Royal Infirmary.—H.S. £150.
Stoke-on-Trent County Borough.—Asst. Tuberc. O. £400.
Surrey, County of.—County M.O.H. £1200.
Swansea County Borough.—Asst. M.O. £500.
Todmorden Borough.—M.O.H. and Sch. M.O. £650.
Ventnor, Isle of Wight, Royal National Hospital for Consumption and Diseases of the Chest.—Asst. Res. M.O. £300.
West Bromwich and District Hospital.—Res. Asst. H.S. £200.
West-End Hospital for Nervous Diseases, 73, Welbeck-street, W.—Dermatologist and Asst. P.
West London Hospital, Hammersmith, W.—Asst. Anæsth.
Weston-super-Mare Hospital.—H.S. £156.

The Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Leyburn, Kirkwall, Bellingham, and at Hull.

Births, Marriages, and Deaths.

BIRTHS.

EDMOND.—On Nov. 2nd, at St. John's Hill, Shrewsbury, the wife of W. S. Edmond, F.R.C.S., of a daughter.

MARRIAGES.

MCGEE—STRETCH.—On Sept. 31st, at St. Patrick's Cathedral, Melbourne, Australia, by the Rev. Gavan Duffy, Dr. Henry McGee, of Brighton, Melbourne, to Lilian, elder daughter of Samuel Stretch, of Caulfield, Melbourne.

MELHUISH—LEWIS.—On Nov. 3rd, at St. Neot Church, Cornwall, Thomas Walter Melhuish, M.R.C.S., L.R.C.P., to Gertrude Mary Code, eldest daughter of Canon and Mrs. F. E. Lewis, of St. Neot Vicarage, Cornwall.

UDALL—TUGWELL.—On Nov. 3rd, at St. Aldate's Church, Oxford, Edward Hugo Udall, M.R.C.S., L.R.C.P., to Alice, daughter of the late Canon Tugwell and of Mrs. Tugwell, of Frenchay-road, Oxford.

WATSON—ADENEY.—On Nov. 3rd, at Monkstown Parish Church, Co. Dublin. S. Ernest Watson, M.B., B.Ch., B.A.O., to Violet Steele Adeney, daughter of W. E. Adeney, D.Sc., and Mrs. Adeney, Burnham, Monkstown, Co. Dublin.

DEATHS.

GOOCH.—On Nov. 1st, at his residence, Rosel, St. Andrews-road, Paignton, James Wyard Gooch, M.R.C.S., L.R.C.P. (late of Windsor).

HARRISON.—On Nov. 7th, at his residence, Lincoln, Charles Harrison, M.D., D.P.H., J.P., aged 82.

HEMMING.—On Nov. 3rd, at Lansdowne-place, Hove, Charles Hemming, M.D., of Ovingdean, in his 91st year.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

Tuesday, Nov. 16th.

GENERAL MEETING OF FELLOWS: at 5 P.M.
Ballot for Election to the Fellowship.

MEETINGS OF SECTIONS.

Tuesday, Nov. 16th.

SECTION OF THERAPEUTICS AND PHARMACOLOGY: at 4.30 P.M.
Papers:
Major Acton, I.M.S.: Pharmacological Actions of the Main Cinchona Alkaloids, illustrating their Isomeric Relationships.
Dr. W. E. Dixon: Quinine Derivatives as Local Anæsthetics.
Dr. Warren Crowe: The Vaccine Treatment of Rheumatoid Arthritis.
Dr. W. E. Dixon and Dr. D. Cow: Pituitrin-like Body in the Cerebro-spinal Fluid, and Hormones which Cause its Appearance therein.

SECTION OF PATHOLOGY: at 8.30 P.M.
Communications:
Dr. H. Schutz: Blood Grouping with Dried Material and its Medico-legal Bearing.
Dr. J. A. Murray: Autoplasty after Exposure to Hot Air.
Dr. Arthur Powell: A Flagellate Organism persisting for Six Years in otherwise Sterile Urine.

Wednesday, Nov. 17th.

SECTION OF HISTORY OF MEDICINE: at 5 P.M.
Papers:
Mr. James Berry: A Public Latrine of Roman Imperial Time.
Dr. Major Greenwood: Galen as an Epidemiologist.

Thursday, Nov. 18th.

SECTION OF DERMATOLOGY: at 5 P.M. (Cases at 4.30 P.M.)
Cases:
Dr. Arthur Whitfield: Case for Diagnosis.
Dr. H. W. Barber and Dr. G. Marshall: (1) Dermatitis Scrofulosa; (2) Cases of Psoriasis treated by Danysz's Method.

Friday, Nov. 19th.

SECTION OF OTOLOGY; at 5 P.M. (Cases at 4.45 P.M.)
Cases and Specimens will be shown by—
The President (Sir Charles Ballance), Mr. Sydney Scott, Mr. Mollison, Dr. Dan McKenzie, and Mr. Colledge.
Mr. Mark Hovell will show an Ear Syringe.
Paper:
Sir William Milligan: Chronic Catarrhal Otitis Media—Some Thoughts and Suggestions.

SECTION OF ELECTRO-THERAPEUTICS: at 8.30 P.M.
Discussion on "Radio-Therapy."
Opening Papers:
Professor S. Russ: Physics.
Dr. Batten: Superficial Therapy.
Dr. Finzi: Deep Therapy.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, W.

MONDAY, Nov. 15th.—2 P.M., Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Mr. MacDonald: Tubercle of the Genital Organs.
TUESDAY.—2 P.M., Mr. Banks Davis: Diseases of the Throat, Nose, and Ear. 5 P.M., Lecture:—Mr. T. Gray: Peritonitis—its Surgical Aspects (1) with Particular Reference to Tubercle Rheumatic and (2) Allied Affections. (Lecture II.)
WEDNESDAY.—2 P.M., Mr. Addison: Operations. 5 P.M., Lecture:—Dr. Owen: Organic Disease of the Heart. (Lecture II.)
THURSDAY.—2 P.M., Mr. B. Harman: Eye Department. 5 P.M., Special Lecture:—Mr. S. Edwards: Points in Rectal Surgery (open to all medical practitioners).
FRIDAY.—10 A.M., Mr. D. Buxton: Dental Department. 5 P.M., Lecture:—Dr. Burnford: Tuberculin in Diagnosis and Treatment.
SATURDAY.—10 A.M., Dr. Arthur Saunders: Medical Diseases of Children. 12 noon, Mr. Sinclair: Surgical Diseases of the Abdomen.
Daily:—10 A.M., Ward Visits. 2 P.M., In-patient, Out-patient Clinics and Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY, Nov. 15th.—2 P.M., Dr. A. J. Whiting: Medical In-patients. 2.30 P.M., Mr. J. B. Banister: Gynæcological. 4.30 P.M., Pyelitis in Pregnancy.
TUESDAY.—9.45 A.M., Lieut.-Col. R. H. Elliot and Mr. N. Fleming: Eye Cases and Operations. 2.30 P.M., Mr. C. H. Hayton: Throat, Nose, and Ear. 4.30 P.M., Cases of Nasal Obstruction.
WEDNESDAY.—2 P.M., Mr. C. H. Hayton: Throat Operations. 2.30 P.M., Dr. W. J. Oliver: Skin. 4.30 P.M., Mr. N. Fleming: Selected Eye Cases.
THURSDAY.—2 P.M., Mr. N. Fleming: Eye Out-patients. 3 P.M., Mr. T. H. C. Benians: Pathological Specimens.
FRIDAY.—2.30 P.M., Dr. C. E. Sundell: Children's Disease. 3 P.M., Mr. E. Gillespie: Cases of Hernia.
SATURDAY.—3 P.M., Mr. H. W. Carson: Surgical In-patients.
Daily:—11 A.M., Mr. T. H. C. Benians: Bacteriological Department. 2 P.M., Operations, In-patient, Out-patient Clinics, &c.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, W.C. 1.

MEDICAL SCHOOL.

MONDAY, Nov. 15th.—2-3.30 P.M., Out-patient Clinic: Dr. Collier. 3.30 P.M., Lecture:—Mr. Paton: Papillœdema.
TUESDAY, Nov. 16th.—2-3.30 P.M., Out-patient Clinic: Dr. Grainger Stewart. 3.30 P.M., Pathological Demonstration: Dr. Greenfield.
WEDNESDAY, Nov. 17th.—2 P.M., Lecture:—Dr. Tooth: Multiple Peripheral Neuritis. 3.15 P.M., Lecture:—Demonstration of Fraenkel's Exercises.
THURSDAY, Nov. 18th.—2-3.30 P.M., Out-patient Clinic: Dr. Farquhar Buzzard. 3.30 P.M., Lecture:—Dr. Gordon Holmes: Cerebro-spinal Syphilis.
FRIDAY, Nov. 19th.—2-3.30 P.M., Out-patient Clinic: Dr. Gordon Holmes. 3.30 P.M., Mr. Sargent: Surgery of the Nervous System.
SATURDAY, Nov. 20th.—9 A.M., Surgical Operations.
Fee for Post-Graduate Course £7 7s. C. M. HINDS HOWELL, Dean.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

THURSDAY, Nov. 18th.—4 P.M., Lecture:—Dr. Thursfield: Diagnosis and Treatment of Chorea.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland-street, W.

MONDAY, Nov. 15th.—5.30 P.M., Post-Graduate Lecture:—Dr. Parsons-Smith: Aortic Aneurysm.

INFANTS HOSPITAL, Vincent-square, Westminster, S.W.

TUESDAY, Nov. 16th.—5 P.M., Post-graduate Lecture:—Dr. B. Vincent: Practical Points in Difficult Cases of Infant Feeding and Management.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE CLINIC.

TUESDAY, Nov. 16th.—4.30 P.M., Lecture:—Dr. A. E. Barclay: X Ray Interpretation and the Cases in which X Rays are likely to be of Assistance in Diagnosis and Treatment.

MANCHESTER FRENCH HOSPITAL POST-GRADUATE LECTURES, 24, Acomb-street (behind Whitworth Park).

THURSDAY, Nov. 18th.—4.15 P.M., Dr. A. C. Magian: Surgical Treatment of Some Common Gynæcological Complaints. (Lecture II.)

SALFORD ROYAL HOSPITAL AND ANCOATS HOSPITAL POST-GRADUATE DEMONSTRATIONS, at the two Hospitals alternately.

THURSDAY, Nov. 18th.—4.30 P.M., Mr. Morley: Diagnosis and Treatment of Gastric Ulcer. (At Ancoats Hospital.)

BOOKS, ETC., RECEIVED.

ALLEN, GEORGE, AND UNWIN, LTD., London.
Suggestion and Autosuggestion. By Professor C. Baudouin. Translated from the French by E. and C. Paul. Pp. 288. 15*s*.

APPLETON, D., AND CO., London and New York.
The Principles and Practice of Medicine. By the late Sir William Osler and Professor T. McCrae. 9th ed., revised. Pp. 1168. 30*s*.

BAILLIÈRE, TINDALL, AND COX, London.
Aids to the Treatment of Diseases of Children. By J. McCaw, M.D. R.U.I. 5th ed. Pp. 404 + xii. 6*s*.

BALE, J., SONS, AND DANIELSSON, London.
The Prevention and Destruction of Rats. By Sergeant-Major E. B. Dewberry, R.A.M.C. With a Preface by Sir A. E. Shipley, F.R.S. Pp. 47. 2*s*.

BELL, G., AND SONS, London.
Chess Openings Illustrated. II., The Centre Game and Danish Gambit. By J. du Mont. Pp. 80.

CARNEGIE ENDOWMENT FOR INTERNATIONAL PEACE, Washington.
A Manual of the Public Benefactions of Andrew Carnegie. Pp. 321.

CHURCHILL, J. AND A., London.
Handbook of Mechanical Dentistry. By J. L. D. Buxton, L.D.S. Pp. 269. 16*s*.
Physiology. By F. Roberts, M.D. Pp. 398. 15*s*.
The Difficulties and Emergencies of Obstetric Practice. By Comyns Berkeley, M.D., M.C., and Victor Bonney, M.D., M.S. 3rd ed. Pp. 809. 42*s*.

DORNAN, W. J., Philadelphia.
Transactions of the American Surgical Association, Vol. XXXVII. Edited by J. H. Jopson, M.D. Pp. 519.
Transactions of the American Gynecological Society, Vol. XLIV. Edited by G. G. Ward, jun., M.D. Pp. 389.

GOVERNMENT PRINTING OFFICE, Washington.
Standard Nomenclature of the Diseases and Pathological Conditions, Injuries, and Poisonings for the United States. Pp. 347.

GRIFFIN, CHARLES, AND CO., London.
The Centenary Volume of Charles Griffin and Co., Publishers, 1820-1920. With Foreword by Lord Moulton. Pp. 290.

HARRISON AND SONS, London.
Tumours Complicating Pregnancy, Labour, and the Puerperium, being the Lettsomian Lectures delivered before the Medical Society of London, February and March, 1920. By Herbert R. Spencer, M.D. Pp. 78 and plates. 5*s*.

HEINEMANN, WILLIAM, London.
Prevention of Venereal Disease. By Sir G. Archdall Reid. With an Introductory Chapter by Sir H. Bryan Donkin. Pp. 447. 15*s*.

LEWIS, H. K., AND CO., London.
Medical Electricity. By H. L. Jones, M.D. 8th ed. Revised and edited by L. W. Bathurst, M.D. Pp. xvi. + 575. 22*s*. 6*d*.

LIPPINCOTT, J. B., COMPANY, Philadelphia and London.
Obstetrics, Normal and Operative. By G. P. Shears, M.D. 3rd ed. Revised by P. F. Williams, M.D. Pp. 745. 35*s*.
Normal Histology, with Special Reference to the Structure of the Human Body. By G. A. Piersol, M.D. 12th ed. Pp. 418. 21*s*.
Diagnosis and Treatment of Brain Injuries with and without Fracture of the Skull. By W. Sharpe, M.D. Pp. 757. 35*s*.
Your Child To-day and To-morrow. By S. M. Gruenberg. 2nd ed., revised and enlarged. With a Foreword by Bishop J. H. Vincent, Chancellor of the Chautauqua Institution. Pp. 255. 7*s*. 6*d*.

MALOINE, A., ET FILS, Paris.
Le Lait Condensé. Par le Dr. P. Lassablière. 2e éd. Pp. 150. Fr. 7.

MURRAY, JOHN, London.
The Fringe of Immortality. By Mary E. Monteith. Pp. 204. 6s.

OLIVER AND BOYD, Edinburgh and London.
A Dictionary of Scientific Terms. By I. F. Henderson, M.A., and W. D. Henderson, M.A. Pp. 354. 18s.

RIDER, W., AND SON, London.
Roger Bacon: the Father of Experimental Science and Mediæval Occultism. By H. Stanley Redgrove, B.Sc. Pp. 64. 1s. 6d.

RUIZ, HERMANOS, Plaza de Santa Ana, 13, Madrid.
Auto-Intoxicacion Intestinal. By Dr. C. J. Diaz. Pp. 144. 3.50 ptas.

SOUTHERN SURGICAL ASSOCIATION, Raleigh, N.C.
Transactions of the Southern Surgical Association. Vol. XXXI. Edited by Dr. H. A. Royster. Pp. 388.

THIN, JAMES, Edinburgh.
Selected Materia Medica. By W. C. Sillar, M.D., and C. G. Lambie, M.B. Pp. 41. 2s. 6d.

UNIVERSITY OF LONDON PRESS, London.
Mind and Work; the Psychological Factors in Industry and Commerce. By C. S. Myers, M.D. Pp. 204. 6s.

UNIVERSITY PRESS, Cambridge.
Instinct and the Unconscious: A Contribution to a Biological Theory of the Psychoneuroses. By W. H. R. Rivers, M.D. Pp. 252. 16s.

URBAN AND SCHWARZENBERG, Berlin and Vienna.
Diagnose der Simulation nervöser Symptome. Von Prof. S. Erben. Pp. 249. M.56.

VERLAG VON DR. WERNER KLINKHARDT, Leipzig.
Die Phenolreaktion (Aldaminreaktion) und ihre Bedeutung für die Biologie. Von W. Loele, Hubertusburg. Pp. 60 and 12 plates.

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Communications relating to the editorial business should be addressed exclusively to the Editor of THE LANCET, 423, Strand, London, W.C. 2.

Notes, Short Comments, and Answers to Correspondents.

HEALTH AND SANITATION IN EGYPT.

Viscount Allenby, His Majesty's High Commissioner, has made his first report on the finances, administration, and condition of Egypt and the Soudan. It contains a lengthy, important, and interesting section devoted to medical and sanitary matters, and of this we append a summary:—

Vital Statistics and Infant Mortality.

In the last report the occurrence of an excess of deaths over births was recorded—a very unusual state of affairs in Egypt. A glance at the vital statistics for 1919 shows something of a reversion to more normal conditions, though not uniformly so through the whole country. In Cairo there were 30,794 births (40·4 per 1000) and 32,161 deaths (42·2 per 1000). In Alexandria there were 15,684 births (35 per 1000) and 18·198 deaths (40·4 per 1000). Practically all the other large centres of population showed an excess of births over deaths—in some cases very small—so that the figures for the 20 principal towns show a mean birth-rate of 40·5 per 1000 and a mean death-rate of 39·9 per 1000. The general rates for the whole country were: birth-rate, 38 per 1000; death-rate, 30 per 1000. The population of the whole country, calculated on July 1st, 1919, was 12,878,000. Amongst this population the births totalled 491,222 and the deaths 383,869. In the 20 principal towns the percentage of children born who died before attaining 1 year of age was 22·4. With regard to epidemic diseases in 1919 the chief features to be noted are: (1) the large incidence of small-pox; (2) a noticeable decrease in the incidence of typhus and relapsing fever cases, as compared with 1916, 1917, and 1918; (3) the persistence of the influenza epidemic of 1918 into the first two months of 1919; (4) a severe and fatal epidemic of malaria; and (5) an increase in the mortality-rate of most of the important infectious diseases caused presumably by non-reporting of cases due to the disturbed internal conditions in the spring and early summer.

Small-pox and Malaria.

The total number of cases of small-pox found and reported during the year—the largest during the last ten years—was 7895; of this number 1926 died, giving a mortality-rate of 24·39 per cent. As soon as the unusually large incidence of cases was noticed early in the year a vaccination campaign was begun, but most unfortunately, owing to the disturbances and interruption of communications, this campaign was stopped. It is also quite certain that the number of cases reported in March, April, and May was much below the real number of cases occurring. In June, however, as conditions became more normal, the notification and discovery of cases improved, and has remained at its usual standard since. As soon as possible the general vaccination campaign was reopened and the number of persons revaccinated during the year was 2,500,000.

A severe and fatal epidemic of malaria occurred in Derr Markaz—the most southerly markaz of Egypt—inhabited by a poor population, living on the narrow strips of cultivation on each side of the Nile. The increase in the death-rate was remarked in the autumn, and blood films examined in the central laboratory in Cairo revealed positive malaria. Many of the blood films were taken from women, and as it is well known that Berberine women seldom travel away from their own villages the suspicion was strengthened that there existed a local and fatal epidemic. The diagnosis was confirmed on investigation, and an active anti-malarial campaign was started. In certain places so many of the inhabitants were incapacitated that work stopped in the fields, and at one place—Ibrim—even the dead lay unburied in the houses for two or three days owing to absence of able-bodied people to bury them. Although it was suspected that the disease had been imported by servants or Labour Corps men returning from Palestine or the Soudan no evidence could be elicited to prove this.

Influenza, Plague, Typhus, and Ankylostomiasis and Bilharziasis.

The epidemic of influenza which appeared in the country in May, 1918, lasted until February, 1919. In February, 1919, it was made compulsory to notify cases of influenza to the Public Health Administration. This was advised on account of the possibility of typhus fever being diagnosed as influenza in order to escape the irksome consequences of disinfection, isolation, &c.

The total number of cases of plague reported was 877, as compared with 357 in 1918. The number of deaths was 473. Of the 877 cases occurring in 1919, 64 were septicæmic, 76 pneumonic, and the rest bubonic.

There were 16,970 cases of typhus fever, with 5569 deaths. The Weil-Felix reaction having been found positive for some 70 per cent. of the cases of typhus at the Fever Hospital, Abbassia, it is now carried out as a routine practice for aid in the diagnosis of that disease.

Steps have been taken to reopen the campaign against ankylostomiasis and bilharziasis which cause so much suffering and loss of efficiency among the population of Egypt, especially the fellaheen. An Auto-Egyptian Committee has the matter in hand, and it is hoped that assistance will again be afforded by the Rockefeller Foundation International Health Commission.

Venereal Diseases.

Under the system at present in vogue for controlling venereal diseases in Egypt, 171,243 examinations of prostitutes were carried out, with the result that 6192 were found to be infected either with syphilis or gonorrhœa. Of course, these figures do not by any means represent the amount of venereal disease existing in the country, as they only refer to the class of "femmes publiques" registered by the police. Of late years there has been, even in those continental countries where the system originated, a movement to reconsider the efficacy of the medical inspection of

prostitutes or card system, with compulsory hospitalisation of such as were found to be diseased, and to adopt a more civilised system, which consists briefly in propaganda, prophylaxis, and gratuitous treatment centres run on confidential lines, for the benefit of any person contracting venereal disease. It is hoped to start on these lines in Egypt, and a committee is at present engaged in working out details of the scheme.

Hospitals and Medical Aid.

The number of Government hospitals remains as last year—24. The original building programme will be completed with the construction of modern hospitals at Esna and Damietta, to be begun in 1920. Messrs. Thomas Cook and Son have generously offered to present their hospital at Luxor—freehold site, building, and equipment—to the Government on certain conditions of upkeep, &c. This hospital, when repaired and opened, will serve the needs of a large district with a population of some 50,000. X ray apparatus are now provided at 12 provincial hospitals. An increase of the medical staff of the hospitals at Bena, Sohag, and Kena has been found necessary, and a second medical officer has been appointed to each of them. It is intended to make a similar addition to the staffs of the other hospitals which continue to be worked by one medical officer. These are Damietta, Assouan, and Esna. English matrons will also be provided for the hospitals as soon as quarters can be built for them.

There are 18 ophthalmic hospitals. The attendances continue to be most satisfactory, and the work carried out is highly appreciated by the people. Five of the hospitals are travelling camps, which are dotted about the country and remain in situ for three or four months at a time, affording ophthalmic relief to quite an extended zone around them. The two chief diseases dealt with are trachoma and acute contagious ophthalmia, the latter being the chief cause of blindness in Egypt. More than 12,000 of the persons who sought treatment at the hospitals in 1919 were blind in one or both eyes—i.e., 15 per cent. of the new patients. The importance of early treatment for children attacked by ophthalmia is now being recognised by the people. A large central 100-bedded ophthalmic hospital for Cairo is sorely needed, for though several ophthalmic clinics, out-patient sections, and dispensaries exist, the director of the ophthalmic section is insistent upon the need for a large central institution to deal with the vast number of patients demanding operation. Moreover, such an institution would provide the best facilities for post-graduate instruction. Thirty-eight dispensaries were at work during the year and afforded gratuitous medical aid to 34,105 patients.

Children's Dispensaries and Maternity Schools.

The children's dispensaries or child welfare bureaux started in 1913, and since gradually extended until at the end of 1918 they numbered 13, were all working at the beginning of 1919, but in March, owing to political conditions, only four remained open, as it was not considered advisable to leave the matrons and nurses in the outlying districts. A disposition on the part of certain provincial councils to close down the children's dispensaries or to convert them into hospitals has been evinced, but the report insists on the desirability of maintaining the present system. The seven schools for dayas and maternity homes had to be closed on account of the March disturbances, so that only an average of 163 working days were obtained; nevertheless, a total of 2223 cases were attended, a larger number than in any previous year. Fifty-nine dayas were trained and received the higher certificate; 21,909 visits were paid by matrons and pupils to patients in their own homes. It is hoped that it will be possible soon to reopen the Maternity Home and Nurses' Training School in Cairo, as until a better class of midwives and nurses is available the high infantile mortality for which Egypt is notorious will continue. At present three classes of midwives exist in Egypt, viz.: (1) Women in possession of foreign midwifery diploma which can be recognised as such by the Health Authority; (2) the "Hakima" or "Kabila" who holds a licence granted by the Government after she has passed a satisfactory examination at the Medical School, but who cannot be considered in any way as a doctor; and (3) the "daya," who is chosen from a lower grade of society, undergoes no practical training, but only a short three weeks' course of theoretical training at a Government hospital, and if successful in passing a somewhat perfunctory examination is given a permit to practise midwifery. Unsatisfactory though she be, no legal powers exist at present to withdraw the daya's licence to practise. Be she blind, deaf, ignorant, or dirty, she remains a "daya" until the end of her days, and these women are a constant means of spreading puerperal fever and death amongst the poorer classes. It is necessary that power to withdraw the permit should be provided, and it is proposed to do this in the Midwives Act which is contemplated.

Public Health Laboratories.

The extension of these laboratories will, it is expected, be finished by the end of 1920, and the whole question of their arrangement and condition is being studied by a small Government commission. With the exception of the city of Alexandria the bacteriological diagnosis for the whole of Egypt is at present centralised at Cairo. This is disadvantageous as regards certain bacteriological diagnoses, such as those required for the control of plague, typhus, &c., and also as regards certain chemical analyses, such as those of distant local water-supplies, aerated waters and ice, on account of the time taken for the specimens to reach the Central Laboratory in Cairo. It is therefore proposed to extend the facilities for bacteriological diagnoses to certain towns in the provinces, such as Suez, Port Said, and Assiout. The total number of analyses performed during 1919 was 10,970. Of the total number of samples of milk examined no less than 21·6 per cent. were found to have been tampered with—i.e., either skimmed or watered, or both.

Vaccine Institute.

The amount of vaccine lymph issued in 1919 was 5,645,020 doses. A campaign of general vaccination having been decided on, heavy demands for lymph were consequently made on the Vaccine Institute, whose normal annual output has hitherto been 2,000,000 doses a month for a period of six months, besides extra demands for the British army, the Sudan Government, Syria, Cyprus, &c., which are constantly coming in. In order to meet these, temporary stabling for calves had to be erected, extra staff taken on, and suitable buffalo calves procured. The tubes and phials necessary for the issue of vaccine in such large quantities could not be procured so that the distribution had to be effected by means of such small medicine bottles as were obtainable. It also became evident that cold-storage accommodation must form part of the Institute, the storage of serums and vaccine in extern lay establishments being unsatisfactory.

Antirabic Institute.

1010 persons were treated. In 136 cases treatment was discontinued, as observation of the animals inflicting the bites showed them to be non-rabid. In 10 cases the persons bitten completed the course of treatment, though it was discovered—too late to avoid treatment—that the animal which inflicted the bite was healthy.

Pharmacies and Narcotic Drugs.

The total number of pharmacies in existence at the end of 1919 was 374. Attention is drawn to the traffic in and smuggling of narcotic drugs which exist on a very large scale. The law at present seems powerless to stop it. Although a decree was published in 1915 to prohibit the cultivation of poppies there can be no doubt that a considerable amount of opium is regularly cultivated by persons who openly apply for permission to transport it for disposal in the towns. The penalties inflicted by the courts on offenders against the law on narcotics and soporifics are ridiculously inadequate. A complete redrafting of the law dealing with pharmaceutical, chemical, and analytical laboratories is now in hand. The laboratories referred to constitute a danger to the public, as at present they are practising under no control, nor is there any means of guaranteeing the capability and qualifications of their owners. These laboratories perform chemical and bacteriological analyses, and frequently doctors base their treatment on the reports they furnish. Moreover, they constitute a danger for the reason that a certain number of them exist for the sole purpose of extracting alkaloids from crude drugs, such as morphine from opium, and cocaine from coca leaves, for sale.

Practice of Medicine.—Lunacy Death-rate.

Permits to practise their profession in Egypt were issued during 1919 to 79 doctors, 19 pharmacists, 5 assistant pharmacists, 3 veterinary surgeons, 9 midwives, and 10 dentists. According to the present register, there are 2617 doctors, 929 pharmacists, 283 assistant pharmacists, 153 veterinary surgeons, 621 midwives, and 185 dentists, but these figures only approximately represent the real state of affairs, as the Administration is rarely notified of the decease, departure, or retirement from practice of persons on the register. The law, as it at present stands, allows the Public Health Administration to license the holders of diplomas from any recognised faculty or university to practise in Egypt, but the appreciation of the value of certain of the diplomas presented is found to be exceedingly difficult and in some cases deliberate fraud has been brought to light. A new law on the practice of dentistry gives power to the Administration to insist that the holders of doubtful diplomas who apply for permits to practise should submit to an examination by a board of examiners appointed by the State. It is intended to insert the same powers in the projected new laws on the practice of medicine, midwifery, chemistry, and pharmacy.

The number of persons admitted into the lunatic asylums averages somewhat over 1000 a year. The death-rate in the asylums rose from 12·25 per cent. in 1913 to 21 per cent. in 1918, but fell rapidly during 1919. Pellagra remains the chief cause of insanity in Egypt.

School of Medicine.

This establishment suffered during the war in many ways, but chiefly from the reduction of the staff. The number of students varied only slightly, there being 234 in 1919 as compared with 237 in 1914; 213 graduated during the period. Dr. Keatinge, whose devoted work during 35 years raised the school to its present level of efficiency, retired from the post of director in 1919. He has been succeeded by Dr. Richards, a distinguished member of the staff. Valuable research was carried on in the school during the war, the most important being the elucidation of the life-history of bilharzia by Lieutenant-Colonel Leiper. Bilharzia was discovered in this school in 1851 by Theodore Bilharz; it was reserved for an Englishman, working in the same school nearly 70 years later, to clear up the more important question of its life-history and transmission, the knowledge of which is a necessary condition of any serious attempt to extirpate it. The welfare of the Egyptian peasantry is closely bound up with the investigation, as the disease is a scourge among them. In the spring of 1919 the School Council seriously took up the question of the reorganisation of the staff and changes of importance have been adopted. As regards the hospital staff Egyptians have been appointed to two posts of surgeon, two posts of physician, one post of gynæcologist, and one post of ophthalmic surgeon. These posts carry with them the right to a seat on the Hospital Council, which is consequently now composed of equal numbers of English and Egyptians. The holders have their own wards and their own teams of students, for whose training they are responsible. Two whole-time professors of clinical medicine and clinical surgery have been appointed in place of the half-time professors of the same subjects. Two additional posts for assistant physicians have been added. The vacant post of registrar and medical tutor has been filled, and a lecturer in anæsthetics and a radiologist have been added to the staff. The school staff has been organised on the principle that every department should comprise a professor, an assistant professor (Egyptian), one or more lecturers, one or more demonstrators, and one or more laboratory attendants. The curriculum has been entirely revised and made to extend over five years instead of four. A site has been secured and plans are being prepared for new buildings for the School of Medicine and Kasr-el-Aini Hospital. The necessity for this has repeatedly been urged by the delegates of the Royal Colleges of Physicians and Surgeons. Meanwhile, necessary extensions are being effected in the existing buildings, part of which it is proposed ultimately to use for the School of Science in the University. A small department has been built for the teaching of throat and ear work, and the physiology department has been enlarged and is being equipped for the teaching of experimental physiology. A research room and store have also been added. The old museum has been cleared out and fitted up as a laboratory for 64 students, and a room for research

BRITISH RESEARCH CHEMICALS.

IT is to be hoped that the appeal of the British chemical manufacturers to all research chemists in this country and other laboratory workers will gain a substantial hearing. It is addressed on behalf of the fine chemical industry both on patriotic grounds and in recognition of the valuable work done by the industry in supplying the needs of the naval and military forces and of the general public during the past few years. It is pointed out that the manufacture of fine chemicals is now recognised as a key industry and is of clear importance to the welfare of the Empire in times of war and none the less in times of peace. The next few years will obviously be critical in the establishment of the home industry on a permanent and successful basis, and a sympathetic treatment by the Government, and support from research bodies and the general public are asked for to prevent the reversion to a pre-war state. The firms prepared to supply the special chemicals referred to are enumerated in a special catalogue recently issued, which gives a list of the chemical substances obtainable and the houses undertaking the supply. The list is remarkably comprehensive, but any inquiry about a particular reagent indicated in a particular research will be welcomed by the Association of British Manufacturers at 166, Piccadilly, London, W. 1.

BLIND MASSEURS.

IN a recent communication signed on behalf of the Association of Certificated Blind Masseurs by Mr. C. Mansell Moullin, Sir Alfred Pearce Gould, and Sir Arthur Pearson, the hope is expressed that members of the medical profession, when recommending massage treatment for their patients, will bear in mind the men who in spite of their handicap are striving their hardest to make good. The training received by blind masseurs is of the most thorough description, lasting 18 months or two years; at the end of this time they have to pass the massage examination of the Chartered Society of Massage and Medical Gymnastics under exactly the same conditions as sighted candidates, together with one special examination in remedial exercises and another (after a further three months' training) in modern methods of treatment by faradism, ionisation, radiant heat, &c., using a galvanometer especially adapted for the blind. The association numbers 126 members, 105 men and 21 women, all of whom are practically blind. Forty-nine members live in or near London; a few have gone to the colonies, and the remainder are in the provinces; a list with names and addresses is supplied on request being made to the secretary, Mrs. F. Chaplin Hall, at 224, Great Portland-street, London, W. 1. Seventy-six of the men lost their sight through injury or disease incurred in the recent war. During the week the British Empire has justly honoured its dead; the present is a fitting time to recall the claims of the living and broken. The range of work which blind masseurs are able to undertake can hardly be described as unlimited, but their courage and determination have won for them a wide and honourable sphere of usefulness.

AN IMPROVED TEAPOT.

IN order to obtain an equable and full infusion of tea and at the same time avoid the unwholesomeness which results from long infusion, it is usual merely to stir the contents with a spoon or shake the pot, both methods often leading to soiled linen and vexation of mind. Dr. Lachlan Grant, of Ballachulish, has patented a device by which a stirrer is attached to the lid of the pot, and by simply turning the knob of the lid a few times a full infusion is made in less than half the time taken by the ordinary method. In addition, a bitter brew and over extraction of tannin are avoided, while there is an economical saving in tea of from 18 per cent. to 22 per cent. The "stirrer" is made in two forms: (1) a triangular-shaped blade of aluminium permanently attached to the metal lid; and (2) a rod of aluminium bent to a U-shape, which can be easily fitted (at the same time it is detachable) to an earthenware lid. The cost of the appliance, apart from the price of the pot, is from 1*s.* to 2*s.* 9*d.* The complete pots can be obtained from Messrs. James Snedden and Co., 25-31, Queen-street, Glasgow.

THE METROPOLITAN WATER-SUPPLY.

APRIL, MAY, AND JUNE, 1920.

THE month of April this year kept its tradition of a rainy season, for the fall was 4·24 in., being 2·47 in. above the average mean rainfall for that month during the previous 37 years. The effect was that according to the results of chemical examination the raw waters of the Thames, Lee, and New River compared badly with the pre-month findings. The filtered waters, generally speaking, also showed a deterioration as regards chemical quality. Compared, however, with the averages of last year the bacteriological results of the river flow revealed an improvement, there being fewer bacteria found. The water as it reached the consumer showed no bacteriological reproach. In May the rainfall was 1·79 in., representing 0·15 of an inch below the average. There was an improvement in quality in all raw river waters according to chemical tests. A similar improvement was shown in regard to the filtered waters. The results compared favourably with those obtained in the corresponding period last year. The filtered waters, however, yielded results not as satisfactory as last year. The raw river waters gave a good bacteriological account and the same was true of the filtered waters. In June the rainfall was 2·41 in., being 0·25 of an inch above the average. There was, on the whole, a falling off of chemical quality in the raw waters of the rivers, but the filtered waters showed an improvement. The results compared favourably with those of last year in the same month. On the same basis the filtered waters showed better results than their respective averages. There were also fewer bacteria found in the raw river waters, and the filtered waters gave "not unsatisfactory results."

PRINTERS ADOPT A LONDON HOSPITAL.

To the Editor of THE LANCET.

SIR,—In your issue of Nov. 6th you express a wish that the example of the printers employed by Messrs. W. H. Smith and Sons in contributing to the support of King's College Hospital might be followed by other branches of the printing trade. It is to be hoped that this will be the case, but the proposition would meet with more enthusiasm if some arrangement were made whereby men who subscribe could be attended to in out-patient departments of hospitals without delay and its resultant loss of wages. Recently a compositor suffering from deafness was sent by his panel doctor to a well-known hospital as an out-patient. On his first visit he secured attention within a reasonable time; but on his second visit a week later he found that there were at least a hundred people to receive attention before his turn came. He preferred to remain deaf and went back to his work.

I am, Sir, yours faithfully,

Nov. 6th, 1920. A PRINTER.

SUB-THYROIDISM IN SCHOOL CHILDREN.

THE chief school medical officer of health of the Cheshire County Council, Dr. Meredith Young, adds to his report of the education department an interesting appendix by Dr. W. W. Stacey on "Thyroid Enlargement in Children." Including all ages examined from 3 to 14, the number was 1991, showing 162 enlarged thyroids. The case incidence was most marked at puberty and the numbers make the condition worthy of consideration both in regard to causation and other physical and mental associations. Figures are given of results in Northwich and district; of 593 girls (age 14 to 8) 123 showed enlarged thyroids. Enlarged thyroids were present in mothers (11), fathers (3), sisters (26), and brother (1), making a total of 41, while 82 were free from enlarged thyroid in the rest of the family. The corresponding figures for 550 boys of the same age (14 to 8) were enlarged thyroids 37; mothers (3), fathers (0), sisters (6), brothers (2), making a total of 11, while 26 were free from enlarged thyroid in the rest of the family. The author states some of the sociological conditions which seem in certain localities to conduce to thyroid deficiency. Reviewing the whole matter from his necessarily limited inquiries, Dr. Stacey expresses the view that thyroid insufficiency is far more prevalent amongst school children than is generally supposed, and it is possible that a large number of dull and backward children are sufferers from this form of disease.

WINE *v.* WHISKY.

To the temperance reformer in this country it will appear a strange proposition that wine is the greatest enemy of alcoholism. This contention is made quite seriously, however, by Professor Maurice Letulle.[1] Professor Letulle writes under an erroneous impression that the present alternative before the American people is a choice between "absolutely free alcohol and water forced upon everyone." We believe we are correct in saying that the most which is hoped for by the wet party in America is the repeal of the Volstead Act and the substitution by Congress of a new Act so defining alcoholic drinks as to exclude from the definition beers and light wines. This misunderstanding does not vitiate the main point of the thesis, which is that everyone who loves and appreciates the taste of wine dislikes that of spirits. Wine is not a food certainly, but it is a condiment. Professor Letulle is an active partisan of the French League against Alcoholism, and cannot be suspected of any sympathy with the vested interests. He does not even recommend the Americans to buy French wines, but rather that they should plant vineyards in their own country.

Country Practitioner.—We have been unable to trace our correspondent in the Medical Register.

[1] La Presse Médicale, Sept. 4th, 1920, Une face de la lutte internationale contre l'alcoolisme.